CH2M HILL
155 Grand Avenue, Suite 800
Oakland, CA 94612
P.O. Box 12681
Oakland, CA 94604-2681
Tel 510.251.2426
Fax 510.622.9000

CH2MHILL

November 29, 2011
277085.31.X2.03/MIPC.C1021

Ms. Janet Naito
California Environmental Protection Agency,
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, CA 94710-2737

Subject: Polychlorinated Biphenyl Site Building 688 UL#01 in Investigation Area C2, where No Further Action Is Required under the Department of Toxic Substances Control Consent Agreement

Dear Ms. Naito:

CH2M HILL prepared this letter to comply with the requirements in the Consent Agreement for Lennar Mare Island, LLCs (LMIs), Eastern Early Transfer Parcel (LMI et al. 2001), signed April 16, 2001, by LMI, the City of Vallejo, and the State of California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), and according to the *Final Interim Removal Action Work Plan for Outdoor Polychlorinated Biphenyl Sites in the Eastern Early Transfer Parcel* (CH2M HILL 2005). This letter requests DTSC concurrence that a no further action (NFA) determination is appropriate, with respect to polychlorinated biphenyl (PCB) contamination, as part of the overall regulatory closure process for PCB Site Building 688 UL#01, on LMIs Eastern Early Transfer Parcel.

An NFA determination is appropriate for PCB Site Building 688 UL#01 because the site-specific risk evaluation presented in this letter demonstrates that the potential risks associated with exposure to residual PCBs at PCB Site Building 688 UL#01 are at the low end of the risk-management range and the hazard indices for the industrial worker are less than 1. The results of the risk evaluation show that no activities are necessary with the implementation of a site specific land use at PCB Site Building 688 UL#01.

Site Identification

Using visual site surveys, reviews of historical records, building closure reports, and databases of electrical equipment, the United States Department of the Navy (Navy) identified sites where PCB-containing equipment was located, PCB spills were documented, or contamination was suspected because of building history or visible stains (Tetra Tech Environmental Management, Inc. [TtEMI] 1999). Navy personnel from Supervisor of Shipbuilding, Conversion and Repair, Portsmouth, Virginia, Environmental Detachment (SSPORTS), conducted interim PCB assessments and performed cleanup actions (e.g., washing, scabbling, and excavation) in accordance with technical work documents (TWDs), where necessary. After the SSPORTS interim PCB assessments and any cleanup actions, TtEMI personnel collected samples either to

confirm the SSPORTS findings that no cleanup was necessary or to determine the effectiveness of the cleanup actions (TtEMI 1999).

Building 688, which was a pump test shop, was constructed in 1941. Building 688 is located east of Railroad Avenue and southeast of Building 686, in Investigation Area C2 (Figure 1). The building is currently occupied and is used for materials storage. According to the *Preliminary Land Use Plan* (SWA Group 2000), Building 688 is in an area designated for future industrial use.

One PCB site associated with Building 688 was listed in the Consent Agreement for LMI's Eastern Early Transfer Parcel: AL#01. PCB Site Building 688 AL#01 consists of the asphalt ground surface area at the northern corner of Building 688. CH2M HILL requested an NFA determination for PCB Site Building 688 AL#01 from DTSC on October 9, 2003 (CH2M HILL 2003). DTSC issued an NFA determination on October 23, 2003 (DTSC 2003).

In addition, three PCB sites associated with Building 688 were identified after the Consent Agreement was signed: UL#01, UL#02, and Building 688 Pits. PCB Site Building 688 UL#02 consists of the building floor stains in the northern, southeastern, and central interior of Building 688. Building 688 Pits consists of pits beneath the floor of Building 688. Closure requests for PCB Sites Building 688 UL#02 and Building 688 Pits are being addressed in separate submittals. This letter addresses PCB Site Building 688 UL#01.

PCB Site Building 688 UL#01 consists of a fenced transformer pad (approximately 1,225 square feet) and an unfenced area of soil with asphalt rubble (approximately 353 square feet) located adjacent to the western exterior wall of Building 688 (Figure 2). Underlying the fenced transformer pad is a concrete vault that can be accessed by two manholes, one on the northwest portion of the pad and one on the southwest portion of the pad. In 1942 and 1943, five transformers (T-0943, T-1024, T-1201, T-1202, and T-1203) were located on the transformer pad. All five transformers were removed by the Navy in August 1986. The transformer pad currently houses four dry transformers (T-1756, T-1757, T-1759, and T-1781) installed by the Navy in October 1987, one rocker arm assembly (RA-122), and four electrical switch cabinets (Navy 1996). It is not known when RA-122 and the remaining associated switch cabinets and electrical boxes were installed (Figure 2).

Documentation of the Navy PCB site assessment sampling, cleanup actions, and confirmation sampling for Building 688 is contained in the *Final Basewide Polychlorinated Biphenyl Confirmation Sampling Report* (TtEMI 1999), in the section for Parcel 05-F2. The following sections discuss sampling, cleanup actions, and the site closure process for PCB Site Building 688 UL#01.

Site Investigations and Cleanup Actions

Table 1 summarizes sampling at PCB Site Building 688 UL#01. This table includes the sample numbers, matrices, dates, and total PCB concentrations (or laboratory detection levels if PCBs were not detected). In addition, Table 1 indicates whether the sample location was removed during a subsequent action or whether it remains and is considered representative of current site conditions.

In April 1996, SSPORTS personnel collected six concrete chip samples (6114-0118, 6114-0119, 6114-0053, 6114-0054, 6120-0016, and 6120-0017) from the transformer pad around and beneath equipment at PCB Site Building 688 UL#01 (Figure 2) (SSPORTS 1996). PCBs were detected in four of the six concrete samples, at concentrations ranging from 1.49 (6114-0054) to 16,400 milligrams per kilogram (mg/kg) (6114-0053) (Table 1). In May 1996, the Navy collected one oil sample (6114-0038) from the switching gear (RA-122) (Figure 2). PCBs were not detected at concentrations above the laboratory reporting limit of 1 part per million (ppm) in this oil sample.

In September 1996, SSPORTS issued TWD 96-1315 to wash the concrete surface of the transformer pad (SSPORTS 1996). After this cleanup action, SSPORTS collected six concrete chip verification samples (6271-0109 through 6271-0114) from the transformer pad. Additionally, SSPORTS collected one soil sample (6271-0115) adjacent to the south side of the transformer pad, and one sediment sample (6271-0116) from an electrical manhole located at the southern end of the transformer pad (Figure 2). PCBs were detected in four of the six concrete chip samples, at concentrations ranging from 13.9 (6271-0112) to 6,400 mg/kg (6271-0110). PCBs were detected at concentrations of 234 mg/kg in the soil sample (6271-0115) collected south of the transformer pad and 140 mg/kg in the sediment sample (6271-0116) collected within the electrical manhole at the southern end of the transformer pad. Detected PCBs were reported as Aroclor-1260 (Table 1).

In January 1997, SSPORTS issued TWD 97-1398 to remove PCB-contaminated media found during verification samples collected under TWD 96-1315 (SSPORTS 1997a). SSPORTS scabbled a portion of the concrete pad to a depth of 0.75 inch. It is unknown if verification samples were collected following scabbling activities.

In August 1997, SSPORTS issued TWD 97-1398, Revision A, to remove PCB-contaminated media (SSPORTS 1997b). SSPORTS scabbled portions of the old concrete pad (including the area under T-1756). The scabbling was performed to a depth of 0.25 inch (0.5 inch under T-1759). Soil and debris were removed from the rims, lips, and covers of the two electrical manholes at PCB Site Building 688 UL#01 (one at the southern end and one at the northern end of the transformer pad). The manhole rims, lips, and covers were washed after the soil and debris were removed. Asphalt and soil were removed from a 5- by 10-foot area at the southern end of the transformer pad. After removing the asphalt, approximately 16 inches of soil were removed at the end of the excavation closest to the pad and approximately 10 inches of soil were removed at the end of the excavation farthest from the pad.

In August 1998, SSPORTS collected concrete chip, wipe, and asphalt verification samples where PCB-contaminated media were removed under TWD 97-1398, Revision A (SSPORTS 1997b). Ten verification concrete chip samples (8-0355, 8-0356, 8-0358 through 8-0364, and 8-0366) were collected from the scabbled concrete surface in August 1998 (Figure 2). PCBs were detected in only one sample (8-0363), at a concentration of 3.7 mg/kg (Table 1). Wipe samples were collected from both the northern (8-0357) and southern (8-0365) manhole covers (Figure 2). PCBs were not detected at concentrations above laboratory detection levels in either of the two

manhole cover wipe samples (Table 1). Four asphalt samples were collected along the western edge of the transformer pad (8-0378 through 8-0380 and 8-0382), and two asphalt samples (8-0376 and 8-0377) were collected along the northern edge of the concrete pad (Figure 2). PCBs were detected in five of these six asphalt samples, with a maximum concentration of 9.3 mg/kg (8-0382). Five asphalt samples (8-0383, 8-0389 through 8-0392) were collected near the boundaries of the asphalt and soil removal area at the southern end of the concrete pad (Figure 2). PCBs were detected in the five of the asphalt samples at concentrations ranging from 3.3 (8-0389) to 43.1 mg/kg (8-0390). One asphalt sample (8-0393) and one soil sample (8-0394) were collected farther south of the asphalt and soil excavation (Figure 2). PCBs were detected in these two samples at concentrations of 2.2 and 1.2 mg/kg, respectively. In addition, five verification soil samples (8-0384 through 8-0388) were collected from within the asphalt and soil removal area. PCBs were detected in all five of the samples at concentrations ranging from 1 mg/kg (8-0387) to 9 mg/kg (8-0386). Sample depths for soil verification samples from within the removal area where not provided in the historical laboratory data.

In 1998, SSPORTS issued TWD 97-1398, Revision B, to remove PCB-contaminated asphalt and soil located south and west of the transformer pad (SSPORTS 1998). An additional 12 inches of soil were removed from the previous asphalt and soil removal area located at the southern end of the transformer pad (to a total depth of approximately 28 inches below ground surface [bgs]). Asphalt south of the removal area and southwest of the transformer pad were removed. Visual observations of the site (i.e., newer-looking pavement) suggested that soil had been removed at and around the five soil sample locations (8-0384 through 8-0388) as directed in TWD 97-1398, Revision B. It is not known whether verification samples were collected by SSPORTS after the soil removal actions were performed.

In April 1999, TtEMI collected one asphalt chip (PC7610) and five soil samples (PC7611 through PC7615) from 0.5 foot bgs, presumably from the previous soil removal areas south and southwest of the transformer pad (TtEMI 1999). The collection locations of samples PC7611 through PC7615 are not shown on historical figures and could not be located in historical documents. PCBs were detected in the six samples, with a maximum total PCB concentration of 2.4J mg/kg ('J' indicates an estimated concentration).

In July 1999, TtEMI collected five soil samples (PC8610 through PC8614) from 2 feet bgs; samples PC8610 and PC8613 were collected in a previous soil removal area (TtEMI 1999). It is assumed that the other samples were also collected from previous soil removal areas; however, the locations of PC8611, PC8612 and PC8614 are not shown on historical figures and could not be located in historical documents. PCBs were detected in the five soil samples, at concentrations ranging between 0.06 J mg/kg (PC8610) and 5.51 mg/kg (PC8612) (Table 1).

In August 1999, TtEMI collected three soil samples (PC8680, PC8681, and PC8684) from 4 feet bgs from the previous soil removal areas (Figure 2) (TtEMI 1999). PCBs were detected in two of the three samples at PCB concentrations of 0.2 mg/kg (PC8681) and 0.09 mg/kg (PC8684) (Table 1).

In June 2002, CH2M HILL collected 10 soil samples (B688UL1GB0362 through B688UL1GB0369, B688UL1GB0375, and B688UL1GB0376) and one fill sample (B688UL1GB0361) from the former soil removal areas located south and southwest of the transformer pad (Figure 2). The soil and fill samples were collected from 1.5 feet bgs. PCBs were detected in 2 of the 11 soil samples, at total concentrations of 1.2 (B688UL1GB0375) and 0.014 J mg/kg (B688UL1GB0368) (Table 1).

On March 19, 2009, during a meeting with DTSC (DTSC 2009), and after a review of historical information and data for PCB Site Building 688 UL#01, DTSC suggested that the lateral extent of PCBs in soil and asphalt at PCB Site Building 688 UL#01 had not been confirmed and that the sediment in manholes had not been adequately characterized. CH2M HILL proposed additional investigation activities at PCB Site Building 688 UL #01.

On August 19, 2010, CH2M HILL collected six surface asphalt samples (B688UL01GB0380, B688UL01GB0381, and B688UL01GB0383 through B688UL01GB0386) and one surface soil sample (B688UL01GB0382) from the southern and northern areas around the concrete transformer pad (Figure 2). Additionally, two sediment samples (B688UL01GB0387 and B688UL01GB0388) were collected inside the electrical manholes located on the northern and southern ends of the concrete vault that extends under the transformer pad (Figure 2). During sampling activities, there was approximately three to five feet of standing water in the electrical vault. The August 2010 samples were analyzed for PCBs using USEPA Method SW8082. PCBs were detected in the nine samples at total PCB concentrations ranging from 0.082 to 1.1 mg/kg in soil and asphalt samples. PCBs were detected in sediment samples collected from within the vault at total concentrations of 15 mg/kg (sample location B688UL01GB0388, northern manhole) to 17 mg/kg (sample location B688UL01GB0387, southern manhole) (Table 1).

Figure 3 shows the sampling locations and remaining PCB concentrations at PCB Site Building 688 UL#01. The laboratory analytical reports for samples collected on August 19, 2010, are provided in Attachment 1. Site photographs taken during a site visit on December 7, 2010, are provided in Attachment 2.

Polychlorinated Biphenyl Site Closure Process

According to the *Final Interim Removal Action Work Plan for Outdoor Polychlorinated Biphenyl Sites in the Eastern Early Transfer Parcel* (CH2M HILL 2005), and under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), NFA is appropriate at a PCB site if no potential source and no PCB contamination are present. Even if a potential source or PCB contamination is present in machinery or building materials, NFA is appropriate under CERCLA if there has been no release of PCBs to soil or groundwater and no visible pathway exists for migration of PCBs to soil or groundwater; such sites will be evaluated under the Toxic Substances Control Act for closure in accordance with the Consent Agreement and Final Order (CA/FO) between USEPA and the Navy, with the City of Vallejo and LMI as intervenors (USEPA et al. 2001). If there has been a known release to soil or groundwater, NFA is also appropriate if the detected PCB concentrations in soil and groundwater do not exceed the applicable screening level, or if results of a site-specific risk evaluation demonstrate that

potential risks associated with exposure to residual PCBs are within the risk-management range generally used to determine whether cleanup is necessary.

A combination of low-occupancy and high-occupancy assumptions is applicable for NFA determinations for PCB Site Building 688 UL#01. The vault that extends under the active transformer pad meets the following definition of "low-occupancy," provided in TSCA (Title 40, Code of Federal Regulations [CFR], Part 761.3):

> *Low-occupancy area* means any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: less than 840 hours (an average of 16.8 hours per week) for non-porous surfaces and less than 335 hours (an average of 6.7 hours per week) for bulk PCB remediation waste. Examples could include an electrical substation or a location in an industrial facility where a worker spends small amounts of time per week (such as an unoccupied area outside a building, an electrical equipment vault, or in the non-office space in a warehouse where occupancy is transitory).

The maximum total PCB concentration in sediment samples collected from the vault is 17 mg/kg, which is less than the TSCA cleanup criteria of 25 mg/kg listed for low-occupancy areas in the CA/FO (USEPA et al. 2001). The vault underlies the active transformer pad that is fenced with a single, locked access gate, and access is limited to Island Energy personnel. The current use of the vault that extends under the active transformer pad at PCB Site Building 688 UL#01 meets the low-occupancy closure definition under TSCA as a vault where occupancy is transitory. A low-occupancy land use covenant (LUC) will be established for the vault at PCB Site Building 688 UL#01 under 40 CFR 761.61(a)(8) and Paragraph (8)(a)(ii)(B) of the CA/FO (USEPA et al. 2001). This LUC will define the requirements for meeting low-occupancy restrictions as defined in 40 CFR 761.3.

The remaining portion of PCB Site Building 688 UL#01 (i.e., the fenced transformer pad and unfenced area of soil with asphalt rubble adjacent to Building 688) will be closed under high-occupancy assumptions. Following is the definition of "high-occupancy" provided in TSCA (40 CFR 761.3):

> *High-occupancy area* means any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: 840 hours or more (an average of 16.8 hours or more per week) for non-porous surfaces and 335 hours or more (an average of 6.7 hours or more per week) for bulk PCB remediation waste. Examples could include a residence, school, day care center, sleeping quarters, a single or multiple occupancy 40 hours per week work station, a school class room, a cafeteria in an industrial facility, a control room, and a work station at an assembly line.

The current use of the PCB Site Building 688 UL#01 active transformer pad and associated electrical equipment meets the high-occupancy closure definition under TSCA as a work station that may involve occupancy up to 40 hours per week. The maximum remaining PCB concentration in soil and asphalt at PCB Site Building 688 UL#01 is 8.4 mg/kg.

Low-occupancy Risk Assessment

Two sediment samples were collected from the vault that extends under the active transformer pad. The maximum detected PCB concentration (17 mg/kg) was used as the exposure point concentration (EPC) for the low-occupancy risk calculations. The ProUCL outputs for the data set could not be calculated because there are only two samples within the data set.

A modified screening level for PCBs, based on cancer risks, was calculated using low-occupancy assumptions. The assumed exposure frequency is 42 days per year, which corresponds to the exposure frequency defined for sites with bulk remediation waste and low-occupancy uses (335 hours per year and an 8-hour work day, as defined in 40 CFR 761.3). The USEPA regional screening level (RSL; USEPA 2010) for PCBs at low-occupancy sites is 4.4 mg/kg (0.74 mg/kg x 250 days per year/42 days per year = 4.4 mg/kg, where the RSL for cancer effects at a target risk of 1×10^{-6} is 0.74 mg/kg). For noncancer effects, the modified screening level for low-occupancy sites is 65 mg/kg (11 mg/kg x 250 days per year/42 days per year = 65 mg/kg, where the RSL for noncancer effects for the industrial worker is 11 mg/kg).

The potential excess lifetime cancer risk (ELCR) for exposure to PCBs in sediments in the vault using low-occupancy industrial exposure factors at PCB Site Building 688 UL#01 is 4×10^{-6} (EPC for total PCBs [17 mg/kg] divided by the low-occupancy screening level for cancer effects [4.4 mg/kg] times $10^{-6} = 4 \times 10^{-6}$), which exceeds DTSC's regulatory point of departure of 1×10^{-6},but is within the risk-management range of 10^{-6} to 10^{-4}. The hazard index (HI) is less than the noncancer threshold of 1 (EPC for total PCBs [17 mg/kg] divided by the low-occupancy screening level for noncancer effects for the industrial worker [65 mg/kg] = 0.3).

High-occupancy Risk Assessment

Using existing data and USEPA's ProUCL software, Version 4.00.05, EPCs were calculated separately for two media groupings: (1) soil and (2) concrete and asphalt (collectively considered building materials). The EPC for soil is 1.2 mg/kg and the EPC for building materials is 1.7 mg/kg, based on the 95 percent upper confidence limit on the mean. The ProUCL outputs for the data sets are provided as Attachment 3.

The potential ELCR for exposure to PCBs in soil using industrial exposure factors at PCB Site Building 688 UL#01 is 2×10^{-6} (EPC for total PCBs [1.2 mg/kg] divided by the high-occupancy RSL for cancer effects [0.74 mg/kg] times $10^{-6} = 2 \times 10^{-6}$), which exceeds DTSC's regulatory point of departure of 1×10^{-6}, but is at the low end of the risk-management range of 1×10^{-6} to 1×10^{-4}. The HI is less than the noncancer threshold of 1 (EPC for total PCBs [1.2 mg/kg] divided by the high-occupancy screening level for noncancer effects for the industrial worker [11 mg/kg] = 0.1).

The potential ELCR for exposure to PCBs in building materials (i.e., asphalt and concrete) using industrial exposure factors at PCB Site Building 688 UL#01 is 2×10^{-6} (EPC for total PCBs [1.7 mg/kg] divided by the high-occupancy RSL for cancer effects [0.74 mg/kg] times $10^{-6} = 2 \times 10^{-6}$), which exceeds DTSC's regulatory point of departure of 1×10^{-6}, but is at the low end of the risk-management range of 1×10^{-6} to 1×10^{-4}. The HI is less than the noncancer threshold of 1 (EPC for total PCBs [1.7 mg/kg] divided by the high-occupancy RSL for noncancer effects for the industrial worker [11 mg/kg] = 0.2).

This method for estimating potential ELCR and HIs associated with exposure to PCBs in concrete and asphalt most likely results in overestimated potential risks. The screening level used for comparison of concrete and asphalt data is based on soil exposure assumptions and includes particulate inhalation, dermal contact, and incidental ingestion exposure routes. For each of the exposure routes, the exposure assumptions for intake of PCBs in soil likely overestimate intake of PCBs from concrete and asphalt for the following reasons:

1. Inhalation–Fine particles containing PCBs are not as readily available for resuspension from concrete as from soil.
2. Dermal Contact–PCBs at PCB Site Building 688 UL#01 are located on the concrete transformer pad, where dermal exposure is likely to be limited to contact of workers' hands with the pad. The ELCR and HI calculations are based on 5,700 square centimeters of exposed skin surface area, which is larger than the surface area of workers' hands.
3. Ingestion–Fine particles are not as readily available from concrete as from hand-to-mouth contact resulting in incidental ingestion of soil.

Because conservative assumptions were used in the risk calculations for concrete and asphalt at this site and the risk evaluation results show potential ELCRs and noncancer HIs at the low end of the risk-management range or below the noncancer threshold of 1, no further PCB cleanup is recommended at PCB Site Building 688 UL#01. Therefore, the conditions for DTSC closure of PCB sites have been met for this site. An NFA determination under CERCLA would be protective of human health and the environment at PCB Site Building 688 UL#01 with recordation of an LUC that limits the vault area of the site to low-occupancy uses and the remaining areas associated with PCB Site Building 688 UL#01 to commercial/industrial land use.

Conclusions

The potential ELCR for exposure to PCBs in sediment at PCB Site Building 688 UL#01 under a low-occupancy industrial scenario is 4×10^{-6} and the HI is less than 1 (0.3). The potential ELCR for exposure to PCBs in soil under a high-occupancy industrial scenario at PCB Site Building 688 UL#01 is 2×10^{-6} and the HI is less than 1 (0.1). The potential ELCR for exposure to PCBs in building materials under a high-occupancy industrial scenario is 2×10^{-6} and the HI is less than 1 (0.2). The results of the site-specific risk evaluation completed for PCB Site Building 688 UL#01 demonstrate that potential ELCR associated with exposure to residual

PCBs at PCB Site Building 688 UL#01 exceed DTSC's regulatory point of departure (1×10^{-6}), but are within the risk-management range generally used to determine whether additional cleanup is necessary (1×10^{-6} to 1×10^{-4}). In accordance with the *Final Interim Removal Action Work Plan for Outdoor Polychlorinated Biphenyl Sites in the Eastern Early Transfer Parcel* (CH2M HILL 2005), NFA is appropriate for PCB Site Building 688 UL#01. It is requested that DTSC issue an NFA determination under CERCLA, with implementation of an LUC restricting the vault that extends under the active transformer pad PCB Site Building 688 UL#01 to low-occupancy uses. Additionally, PCB Site Building 688 UL#01 will be restricted to commercial/industrial uses under the Investigation Area C2-wide LUC.

Please respond to this letter with confirmation that, in accordance with the approved *Final Interim Removal Action Work Plan for Outdoor Polychlorinated Biphenyl Sites in the Eastern Early Transfer Parcel* (CH2M HILL 2005) and the Consent Agreement (LMI et al. 2001), NFA under CERCLA is appropriate for PCB Site Building 688 UL#01. Please submit your response to Stephen Farley at the above address or via email at Stephen.Farley@CH2M.com. If you have questions regarding the PCB site addressed in this letter, please contact Jennifer Lindquist at 530/229-3224 or Stephen Farley at 510/251-2426.

Sincerely,

CH2M HILL

Jennifer Lindquist
Project Manager

Stephen M. Farley, P.G.
Senior Technical Consultant

RDD/113110006 (CAH5035.docx)
ES110711063603RDD

Enclosures: Table 1, Figures 1 through 3, and Attachments 1 through 3

References

CH2M HILL. 2003. Letter."Fourteen Polychlorinated Biphenyl Sites Within Investigation Area C2 on the Eastern Early Transfer Parcel of Mare Island Where No further Action is Required under the Department of Toxic Substances Control Consent Agreement, Lennar Mare Island, Vallejo, California." October 9.

_____. 2005. *Final Interim Removal Action Work Plan for Outdoor Polychlorinated Biphenyl Sites in the Eastern Early Transfer Parcel.* April 27.

Lennar Mare Island, LLC (LMI), City of Vallejo, and State of California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). 2001. *Consent Agreement Between Lennar Mare Island, the City of Vallejo, and the State of California, California Environmental Protection Agency, Department of Toxic Substances Control.* April 16.

State of California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). 2003. Letter."Lennar Mare Island, Request for No Further Action Determinations for Polychlorinated BiPhenyl (PCB) Sites-Fourteen Sites within Investigation Area C2, Dated October 9, 2003." October 23.

_____. 2009. Email from Henry Chui/DTSC to Paul Scherbak/CH2M HILL."Re: Path Forward for Unknown PCB Site B688 UL#01, IA C2 Lennar Mare Island." March 19.

SWA Group. 2000. *Preliminary Land Use Plan.* May 23.

Supervisor of Shipbuilding, Conversion, and Repair, Portsmouth, Virginia, Environmental Detachment (SSPORTS). 1996. *PCB Decontamination Technical Work Document (TWD) 96-1315.* August.

_____. 1997a. *PCB Decontamination Technical Work Document (TWD) 97-1398.* January.

_____. 1997b. *PCB Decontamination Technical Work Document (TWD) 97-1398 Rev. A.* January.

_____. 1998. *PCB Decontamination Technical Work Document (TWD) 97-1398 Rev. B.* October.

Tetra Tech Environmental Management, Inc. (TtEMI). 1999. *Final Basewide Polychlorinated Biphenyl Confirmation Sampling Summary Report.* Revised. January.

United States Department of the Navy (Navy). 1996. *PCB Transformers.* Table from the Caretaker Site Office. November 5.

United States Environmental Protection Agency (USEPA). 2010. *Regional Screening Levels for Chemical Contaminants at Superfund Sites.* http://www.epa.gov/region9/superfund/prg/. November.

United States Environmental Protection Agency (USEPA), United States Department of the Navy (Navy), City of Vallejo, and Lennar Mare Island, LLC (LMI). 2001. *Complaint/Consent Agreement and Final Order Between Lennar Mare Island, the City of Vallejo, the U.S. Department of the Navy, and the U.S. Environmental Protection Agency Region IX.* EPA Docket No. TSCA-9-2002-0002. December 20.

Copy to (with enclosures):

Ms. Elizabeth Wells
California Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
(Non-PCB documents only;
Also electronic copy of non-PCB documents)

Ms. Carolyn d'Almeida
U.S. EPA Region 9 (SFD 8-1)
75 Hawthorne Street, 9th Floor
San Francisco, CA 94105

Mr. Neal Siler
Lennar Mare Island, LLC
690 Walnut Avenue, Suite 100
Vallejo, CA 94592
(Electronic copy also)

Mr. Mike Mentink
United States Navy
Caretaker Site Office
410 Palm Avenue, Building 1, Suite 161
San Francisco, CA 94130
(2 copies)

Ms. Sheila Roebuck
Lennar Mare Island, LLC
690 Walnut Avenue, Suite 100
Vallejo, CA 94592
(Electronic copy of IA B.1, IA H2, and IA D1.3 only)

Mr. Gil Hollingsworth
555 Santa Clara Street
Vallejo, CA 94590-5934
(Electronic copy only)

Mr. Gordon Hart
Paul, Hastings, Janofsky, Walker, LLP
55 Second Street, 24th Floor
San Francisco, CA 94105-3411

Ms. Myrna Hayes
816 Branciforte Street
Vallejo, CA 94590

Mr. Michael F. McGowan, Ph.D.
Arc Ecology
4634-3rd Street
San Francisco, CA 94124
(Electronic copy only)

CH2M HILL copies:
Paula Bolio
Clemena Balbuena
Tim Graves (Electronic copy only)

Copy to (without enclosures):

Ms. Janet Whitlock
U.S. Fish and Wildlife Service
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

Ms. Laurie Sullivan
National Oceanic and Atmospheric Administration
75 Hawthorne Street, 9th Floor
San Francisco, CA 94105
(Electronic copy only via email)

Mr. Ron Pilkington
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Ms. Paula Tygielski
456 East L Street
Benicia, CA 94510

Mr. Adam A. Chavez
1031 Florida Street
Vallejo, CA 94590-5513

Mr. Gerald Karr
149 Garden Court
Vallejo, CA 94591

Mr. Justice Budu
107 Fieldstone Way
Vallejo, CA 94589

Mr. Mike Coffey
6 Oriole Court
American Canyon, CA 94503

Mr. James O'Loughlin
1449 Sheridan Drive
Napa, CA 94558

Mr. Max Delaney
San Francisco Bay Conservation and Development Commission
50 California Street, Suite 2600
San Francisco, CA 94111

Mr. Terry Schmidtbauer
Dept. of Resource Management
County of Solano
675 Texas Street, Suite 5500
Fairfield, CA 94533

Mr. Russell S. Sherman
Vallejo Fire Department
970 Nimitz Avenue
Vallejo, CA 94592

Table

TABLE 1
Sample Results for PCB Site Building 688 UL#01
PCB Sites, Lennar Mare Island, Vallejo, California

Sample Number	Sample Matrix	Sample Date	Total PCB Concentration[a]	Comments
6114-0053	Concrete	04/26/1996	16,400 mg/kg	Collected from floor of transformer pad; removed under TWD 96-1315; Aroclor-1260
6114-0054	Concrete	04/26/1996	1.49 mg/kg	Collected from floor of transformer pad; removed under TWD 97-1398, Rev. A; Aroclor-1260
6114-0118	Concrete	04/26/1996	<1 mg/kg	Collected from floor of transformer pad; removed under TWD 97-1398, Rev. A
6114-0119	Concrete	04/26/1996	250 mg/kg	Collected from floor of transformer pad; removed under TWD 96-1315; Aroclor-1260
6120-0016	Concrete	04/30/1996	<1 mg/kg	Collected from floor of transformer pad; removed under TWD 97-1398, Rev. A
6120-0017	Concrete	04/30/1996	1.5 mg/kg	Collected from floor of transformer pad; removed under TWD 97-1398, Rev. A; Aroclor-1260
6114-0038	Oil	Laboratory data sheet dated 05/02/1996	<1 ppm	Collected from switching gear (RA-122)
6271-0109	Concrete	10/18/1996	<1 mg/kg	Verification sample collected from floor of transformer pad
6271-0110	Concrete	10/18/1996	6,400 mg/kg	Verification sample collected from floor of transformer pad; removed under TWD 96-1398; Aroclor-1260
6271-0111	Concrete	10/18/1996	24 mg/kg	Verification sample collected from floor of transformer pad; removed under TWD 96-1398; Aroclor-1260
6271-0112	Concrete	10/18/1996	13.9 mg/kg	Verification sample collected from floor of transformer pad; removed under TWD 96-1398; Aroclor-1260
6271-0113	Concrete	10/18/1996	<1 mg/kg	Verification sample collected from floor of transformer pad;
6271-0114	Concrete	10/18/1996	15.2 mg/kg	Verification sample collected from floor of transformer pad; removed under TWD 96-1398; Aroclor-1260
6271-0115	Soil	10/18/1996	234 mg/kg	Collected south of transformer pad; removed under TWD 97-1398, Rev. A; Aroclor-1260

TABLE 1
Sample Results for PCB Site Building 688 UL#01
PCB Sites, Lennar Mare Island, Vallejo, California

Sample Number	Sample Matrix	Sample Date	Total PCB Concentration[a]	Comments
6271-0116	Sediment/Soil	10/18/1996	140 mg/kg	Collected from within manhole; removed under TWD 97-1398; Aroclor-1260
8-0355	Concrete	08/06/1998	<1 mg/kg	Verification sample collected from floor of transformer pad
8-0356	Concrete	08/06/1998	<1 mg/kg	Verification sample collected from floor of transformer pad
8-0357	Metal	08/06/1998	<5 μg/100cm^2	Verification sample collected from manhole cover
8-0358	Concrete	08/06/1998	<1 mg/kg	Verification sample collected from floor of transformer pad
8-0359	Concrete	08/06/1998	<1 mg/kg	Verification sample collected from floor of transformer pad
8-0360	Concrete	08/06/1998	<1 mg/kg	Verification sample collected from floor of transformer pad
8-0361	Concrete	08/06/1998	<1 mg/kg	Verification sample collected from floor of transformer pad
8-0362	Concrete	08/06/1998	<1 mg/kg	Verification sample collected from floor of transformer pad
8-0363	Concrete	08/06/1998	3.7 mg/kg	Verification sample collected from floor of transformer pad; Aroclor-1254
8-0364	Concrete	08/06/1998	<1 mg/kg	Verification sample collected from floor of transformer pad
8-0365	Metal	08/06/1998	<5 μg/100cm^2	Verification sample collected from manhole cover
8-0366	Concrete	08/06/1998	<1 mg/kg	Verification sample collected from floor of transformer pad
8-0376	Asphalt	08/31/1998	8.4 mg/kg	Collected from asphalt surface adjacent to transformer pad; Aroclor-1254
8-0377	Asphalt	08/31/1998	2 mg/kg	Collected from asphalt surface adjacent to transformer pad; Aroclor-1254
8-0378	Asphalt	08/31/1998	<1 mg/kg	Collected from asphalt surface adjacent to transformer pad
8-0379	Asphalt	08/31/1998	1.2 mg/kg	Collected from asphalt surface adjacent to transformer pad; Aroclor-1260
8-0380	Asphalt	08/31/1998	7.8 mg/kg	Collected from asphalt surface adjacent to transformer pad; removed under TWD-1398, Rev. B; Aroclor-1260

TABLE 1
Sample Results for PCB Site Building 688 UL#01
PCB Sites, Lennar Mare Island, Vallejo, California

Sample Number	Sample Matrix	Sample Date	Total PCB Concentration[a]	Comments
8-0382	Asphalt	08/31/1998	9.3 mg/kg	Collected from asphalt surface adjacent to transformer pad; removed under TWD-1398, Rev. B; Aroclor-1260
8-0383	Asphalt	08/31/1998	8.3 mg/kg	Collected from asphalt surface adjacent to transformer pad; removed under TWD-1398, Rev. B; Aroclor-1254
8-0384	Soil	08/31/1998	4.1 mg/kg	Verification sample collected from excavation south of transformer pad; removed under TWD-1398, Rev. B; Aroclor-1260
8-0385	Soil	08/31/1998	2.2 mg/kg	Verification sample collected from excavation south of transformer pad; removed under TWD-1398, Rev. B; Aroclor-1260
8-0386	Soil	08/31/1998	9 mg/kg	Verification sample collected from excavation south of transformer pad; removed under TWD-1398, Rev. B; Aroclor-1260
8-0387	Soil	08/31/1998	1 mg/kg	Verification sample collected from excavation south of transformer pad; removed under TWD-1398, Rev. B; Aroclor-1254
8-0388	Soil	08/31/1998	1.4 mg/kg	Verification sample collected from excavation south of transformer pad; removed under TWD-1398, Rev. B; Aroclor-1260
8-0389	Asphalt	08/31/1998	3.3 mg/kg	Collected from asphalt surface adjacent to transformer pad; removed under TWD-1398, Rev. B; Aroclor-1260
8-0390	Asphalt	08/31/1998	43.1 mg/kg	Collected from asphalt surface adjacent to transformer pad; removed under TWD-1398, Rev. B; Aroclor-1260
8-0391	Asphalt	08/31/1998	38.5 mg/kg	Collected from asphalt surface adjacent to transformer pad; removed under TWD-1398, Rev. B; Aroclor-1260
8-0392	Asphalt	08/31/1998	16.7 mg/kg	Collected from asphalt surface south of the transformer pad; removed under TWD-1398, Rev. B; Aroclor-1254

TABLE 1
Sample Results for PCB Site Building 688 UL#01
PCB Sites, Lennar Mare Island, Vallejo, California

Sample Number	Sample Matrix	Sample Date	Total PCB Concentration[a]	Comments
8-0393	Asphalt	08/31/1998	2.2 mg/kg	Collected from asphalt surface south of the transformer pad; Aroclor-1260
8-0394	Soil	08/31/1998	1.2 mg/kg	Collected from area south of asphalt surface adjacent to transformer pad; Aroclor-1260
PC7610	Soil	04/15/1999	0.8J mg/kg	Collected from asphalt surface adjacent to transformer pad
PC7611	Soil	04/15/1999	0.44J mg/kg	Collected from 0.5 foot bgs; sample location is unknown
PC7612	Soil	04/15/1999	2.1J mg/kg	Collected from 0.5 foot bgs; sample location is unknown
PC7613	Soil	04/15/1999	0.24J mg/kg	Collected from 0.5 foot bgs; sample location is unknown
PC7614	Soil	04/15/1999	2.4J mg/kg	Collected from 0.5 foot bgs; sample location is unknown
PC7615	Soil	04/15/1999	0.33 mg/kg	Collected from 0.5 foot bgs; sample location is unknown
PC8610	Soil	07/14/1999	0.06J mg/kg	Collected from 2 feet bgs
PC8611	Soil	07/14/1999	2.41 mg/kg	Collected from 2 feet bgs; sample location is unknown
PC8612	Soil	07/14/1999	5.51 mg/kg	Collected from 2 feet bgs; sample location is unknown
PC8613	Soil	07/14/1999	0.2 mg/kg	Collected from 2 feet bgs
PC8614	Soil	07/14/1999	1.5 mg/kg	Collected from 2 feet bgs; sample location is unknown
PC8680	Soil	08/02/1999	<0.011 mg/kg	Collected from 4 feet bgs
PC8681	Soil	08/02/1999	0.2 mg/kg	Collected from 4 feet bgs
PC8684	Soil	08/02/1999	0.09 mg/kg	Collected from 4 feet bgs
B688UL1GB0361	Soil	06/25/2002	<0.019 mg/kg	Collected from fill at 1.5 feet bgs; proxy value for Aroclor-1260 0.019 mg/kg
B688UL1GB0362	Soil	06/25/2002	<0.019 mg/kg	Collected from 1.5 feet bgs; proxy value for Aroclor-1260 0.019 mg/kg
B688UL1GB0363	Soil	06/25/2002	<0.02 mg/kg	Collected from 1.5 feet bgs; proxy value for Aroclor-1260 0.02 mg/kg
B688UL1GB0364	Soil	06/25/2002	<0.019 mg/kg	Collected from 1.5 feet bgs; proxy value for Aroclor-1260 0.019 mg/kg

TABLE 1
Sample Results for PCB Site Building 688 UL#01
PCB Sites, Lennar Mare Island, Vallejo, California

Sample Number	Sample Matrix	Sample Date	Total PCB Concentration[a]	Comments
B688UL1GB0365	Soil	06/25/2002	<0.019 mg/kg	Collected from 1.5 feet bgs; proxy value for Aroclor-1260 0.019 mg/kg
B688UL1GB0366	Soil	06/25/2002	<0.018 mg/kg	Collected from 1.5 feet bgs; proxy value for Aroclor-1260 0.018 mg/kg
B688UL1GB0367	Soil	06/25/2002	<0.018 mg/kg	Collected from 1.5 feet bgs; proxy value for Aroclor-1260 0.018 mg/kg
B688UL1GB0368	Soil	06/252002	0.014J mg/kg	Collected from 1.5 feet bgs; Aroclor-1260 = 0.014 J mg/kg
B688UL1GB0369	Soil	06/25/2002	<0.02 mg/kg	Collected from 1.5 feet bgs; proxy value for Aroclor-1260 0.02 mg/kg
B688UL1GB0375	Soil	06/25/2002	1.2 mg/kg	Collected from 1.5 feet bgs; Aroclor-1260 = 1.2 mg/kg
B688UL1GB0376	Soil	06/25/2002	<0.019 mg/kg	Collected from 1.5 feet bgs; proxy value for Aroclor-1260 0.019mg/kg
B688UL01GB0380	Asphalt	08/19/2010	1.1 mg/kg	Collected from asphalt surface outside northeast corner of electrical substation; Aroclor-1260 = 1.1 mg/kg; proxy value for Aroclor-1254 0.00405 mg/kg; proxy value for Aroclor-1262 0.021 mg/kg
B688UL01GB0381	Asphalt	08/19/2010	0.53 mg/kg	Collected from asphalt surface outside north corner of electrical substation; Aroclor-1260 = 0.5 mg/kg; proxy value for Aroclor-1254 0.004 mg/kg; proxy value for Aroclor-1262 0.021 mg/kg
B688UL01GB0382	Soil	08/19/2010	0.67 mg/kg	Collected from soil surface outside southeast corner of PCB Site Building 688 UL#01; Aroclor-1260 = 0.64 mg/kg; proxy value for Aroclor-1254 0.00405 mg/kg; proxy value for Aroclor-1262 0.021 mg/kg
B688UL01GB0383	Asphalt	08/19/2010	0.082 mg/kg	Collected from asphalt surface outside southwest corner of PCB Site Building 688 UL#01, near railroad tracks; Aroclor-1260 = 0.057 mg/kg; proxy value for Aroclor-1254 0.004 mg/kg; proxy value for Aroclor-1262 0.021 mg/kg

TABLE 1
Sample Results for PCB Site Building 688 UL#01
PCB Sites, Lennar Mare Island, Vallejo, California

Sample Number	Sample Matrix	Sample Date	Total PCB Concentration[a]	Comments
B688UL01GB0384	Asphalt	08/19/2010	0.092 mg/kg	Collected from asphalt surface outside south side of PCB Site Building 688 UL#01; Aroclor-1260 = 0.067 mg/kg; proxy value for Aroclor-1254 0.004 mg/kg; proxy value for Aroclor-1262 0.021 mg/kg
B688UL01GB0385	Asphalt	08/19/2010	0.1 mg/kg	Collected from asphalt surface west side of electrical substation; Aroclor-1260 = 0.15 mg/kg; proxy value for Aroclor-1254 0.00405 mg/kg; proxy value for Aroclor-1262 0.021 mg/kg
B688UL01GB0386	Asphalt	08/19/2010	0.18 mg/kg	Collected from asphalt surface west side of electrical substation and north of B688UL01GB0385; Aroclor-1260 = 0.15 mg/kg; proxy value for Aroclor-1254 0.00405 mg/kg; proxy value for Aroclor-1262 0.021 mg/kg
B688UL01MH0387	Sediment	08/19/2010	17 mg/kg	Collected from electrical vault bottom through south manhole; Aroclor-1260 = 16 mg/kg; proxy value for Aroclor-1254 0.16 mg/kg; proxy value for Aroclor-1262 0.85 mg/kg
B688UL01MH0388	Sediment	08/19/2010	15 mg/kg	Collected from electrical vault bottom through north manhole; Aroclor-1260 = 14 mg/kg; proxy value for Aroclor-1254 0.16 mg/kg; proxy value for Aroclor-1262 0.85 mg/kg

[a]Total PCBs were calculated by summing the detected Aroclors or, for nondetects, by using proxy value of one-half the laboratory detection level for historically detected Aroclors and adding this to detected Aroclors.

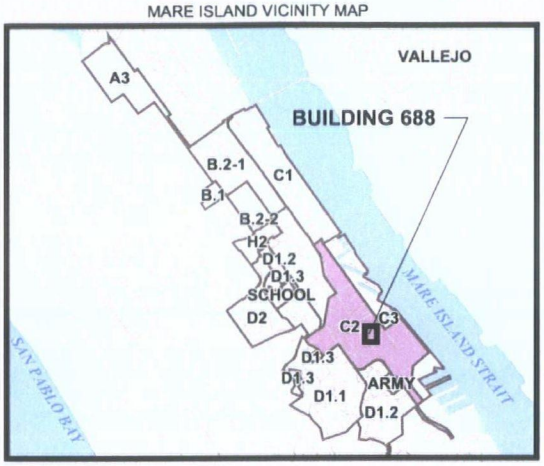
Notes:

Sample numbers beginning with PC were collected by TtEMI. Sample numbers beginning with B were collected by CH2M HILL. Other samples were collected by SSPORTS.

J = estimated concentration
bgs = below ground surface
mg/kg = milligrams per kilogram
µg/100 cm^2 = micrograms per 100 square centimeters
ppm = parts per million
PCB = polychlorinated biphenyl
Rev. = Revision
TWD = Technical Work Document

Figures

MARE ISLAND VICINITY MAP



SAN FRANCISCO BAY VICINITY MAP

686

680

TEMPORARY STRUCTURE

686A

BUILDING 688

PCB SITE BUILDING 688 UL#01

RAILROAD AVE

858

382

N

0 45

Feet

LEGEND

FENCE

RAILROAD

STRUCTURE

ROAD

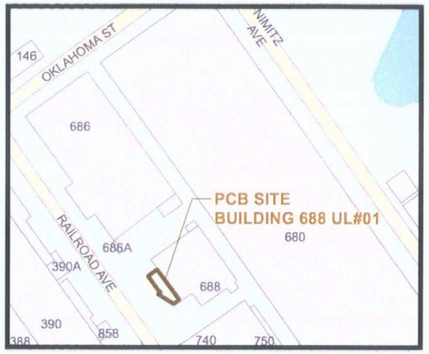
FIGURE 1
LOCATION OF PCB SITE BUILDING 688

LENNAR MARE ISLAND, VALLEJO, CALIFORNIA

CH2MHILL

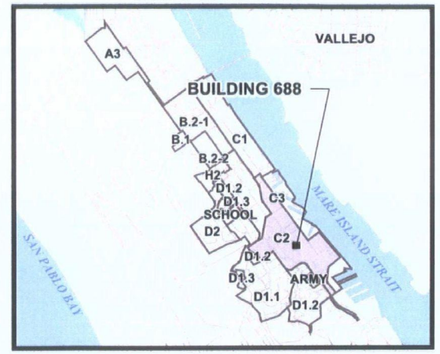
V:\MARE_ISLAND_264204\MXDS\PCB\LUC\B688\FIG1_B688_BLOC.MXD ECLARK1 11/10/2011 8:06:45 AM

BUILDING VICINITY MAP



SAMPLE LOCATIONS UNKNOWN		
LOCID	CONCENTRATION	UNIT
PC7611	0.44J	mg/kg
PC7612	2.1J	mg/kg
PC7613	0.24J	mg/kg
PC7614	2.4J	mg/kg
PC7615	0.33=	mg/kg
PC8611	2.41=	mg/kg
PC8612	5.51=	mg/kg
PC8614	1.5=	mg/kg

MARE ISLAND VICINITY MAP



LEGEND

- ASPHALT SAMPLE
- CONCRETE CHIP SAMPLE
- CHIP SAMPLE
- GEOPROBE SAMPLE
- LIQUID CONTENTS SAMPLE
- SOIL BORING SAMPLE
- SEDIMENT/SOIL SAMPLE
- SEDIMENT GRAB SAMPLE
- SOIL GRAB SAMPLE
- SURFACE SOIL SAMPLE
- WIPE SAMPLE
- FENCE
- ASPHALT
- CONCRETE PAD
- REMOVED SOIL AND ASPHALT TO 18 INCHES BGS (TWD 97-1398, REVISION B)
- REMOVED SOIL AND ASPHALT TO 28 INCHES BGS (TWD 97-1398, REVISIONS A AND B)
- SCABBLED TO 0.5 INCH (TWD 97-1398, REVISION A)
- SCABBLED TO 0.25 INCH (TWD 97-1398, REVISION A)
- SCABBLED TO 0.75 INCH (TWD 96-1398)
- STRUCTURE

NOTES:
1. "<" = NOT DETECTED AT OR ABOVE THE INDICATED CONCENTRATION
2. "=" = ANALYTE WAS DETECTED
3. "J" = ESTIMATED DETECTED RESULT
4. GRAY LABEL = REMOVED SAMPLE LOCATION
5. ANALYTE ABBREVIATE:
   A-1254 = AROCLOR-1254
   A-1260 = AROCLOR-1260
6. SSPORTS SAMPLES COLLECTED FROM THE CONCRETE PAD FOLLOWING SCABBLING ACTIVITIES WERE COLLECTED FROM THE SURFACE OF THE SCABBLED AREA AND ARE LISTED AS 0.0 FEET BGS
7. SAMPLE B688UL1GB0361 WAS COLLECTED IN FILL MATERIAL

SAMPLE LOCATION — IR14VB219
PCB CONCENTRATION — 86J (2.8) mg/kg
SAMPLE BEGINNING DEPTH (FEET BGS)
UNIT

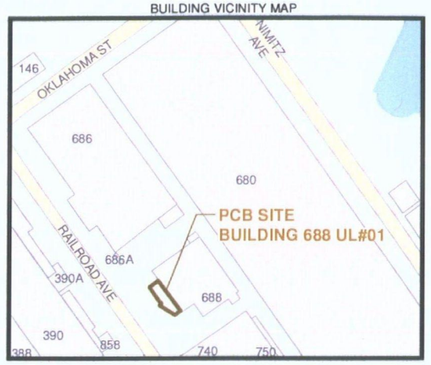
FIGURE 2
PCB SITE BUILDING 688 UL#01 PREVIOUS SAMPLING LOCATIONS AND PCB CONCENTRATIONS

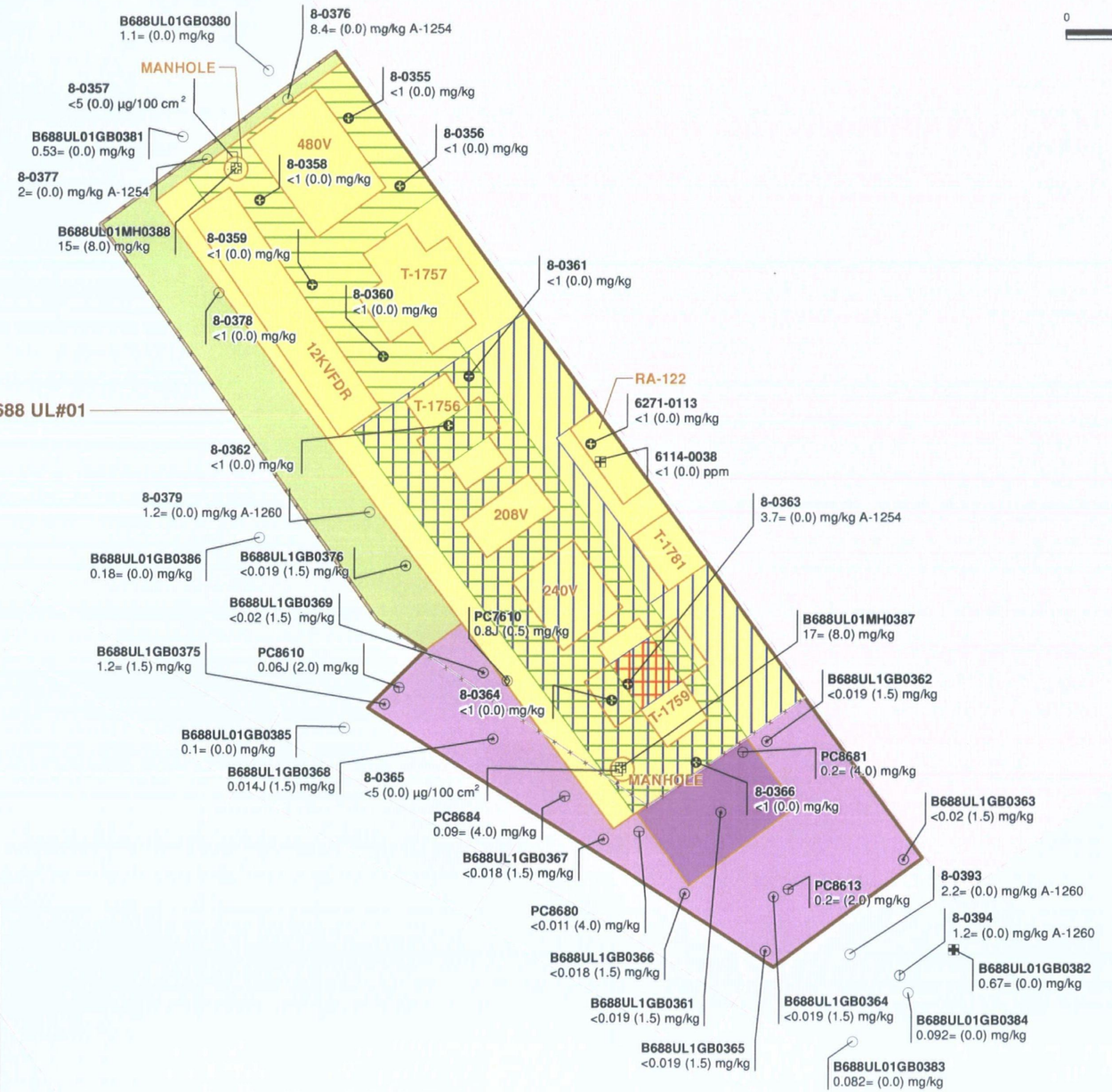
LENNAR MARE ISLAND, VALLEJO, CALIFORNIA

CH2MHILL

RDD V:\MARE_ISLAND_264204\MXDS\PCB\B688\FIG2_B688PREV_SAMPLE_BLOC11X17_B.MXD ECLARK1 11/3/2011 12:22:00 PM

BUILDING VICINITY MAP

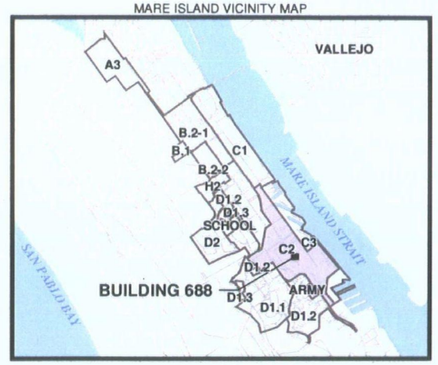




N

0 10 Feet

MARE ISLAND VICINITY MAP



LEGEND

- ASPHALT SAMPLE
- CONCRETE CHIP SAMPLE
- CHIP SAMPLE
- GEOPROBE SAMPLE
- LIQUID CONTENTS SAMPLE
- SOIL BORING SAMPLE
- SEDIMENT GRAB SAMPLE
- SOIL GRAB SAMPLE
- SURFACE SOIL SAMPLE
- WIPE SAMPLE
- FENCE
- ASPHALT
- CONCRETE PAD
- REMOVED SOIL AND ASPHALT TO 18 INCHES BGS (TWD 97-1398, REVISION B)
- REMOVED SOIL AND ASPHALT TO 28 INCHES BGS (TWD 97-1398, REVISIONS A AND B)
- SCABBLED TO 0.5 INCH (TWD 97-1398, REVISION A)
- SCABBLED TO 0.25 INCH (TWD 97-1398, REVISION A)
- SCABBLED TO 0.75 INCH (TWD 96-1398)
- STRUCTURE

NOTES:
1. "<" = NOT DETECTED AT OR ABOVE THE INDICATED CONCENTRATION
2. "=" = ANALYTE WAS DETECTED
3. "J" = ESTIMATED DETECTED RESULT
4. ANALYTE ABBREVIATIONS:
   A-1254 = AROCLOR-1254
   A-1260 = AROCLOR-1260
5. SSPORTS SAMPLES COLLECTED FROM THE CONCRETE PAD FOLLOWING SCABBLING ACTIVITIES WERE COLLECTED FROM THE SURFACE OF THE SCABBLED AREA AND ARE LISTED AS 0.0 FEET BGS
6. SAMPLE B688UL1GB0361 WAS COLLECTED IN FILL MATERIAL

SAMPLE LOCATION — IR14VB219
PCB CONCENTRATION — 86J (2.8) mg/kg
SAMPLE BEGINNING DEPTH (FEET BGS)
UNIT

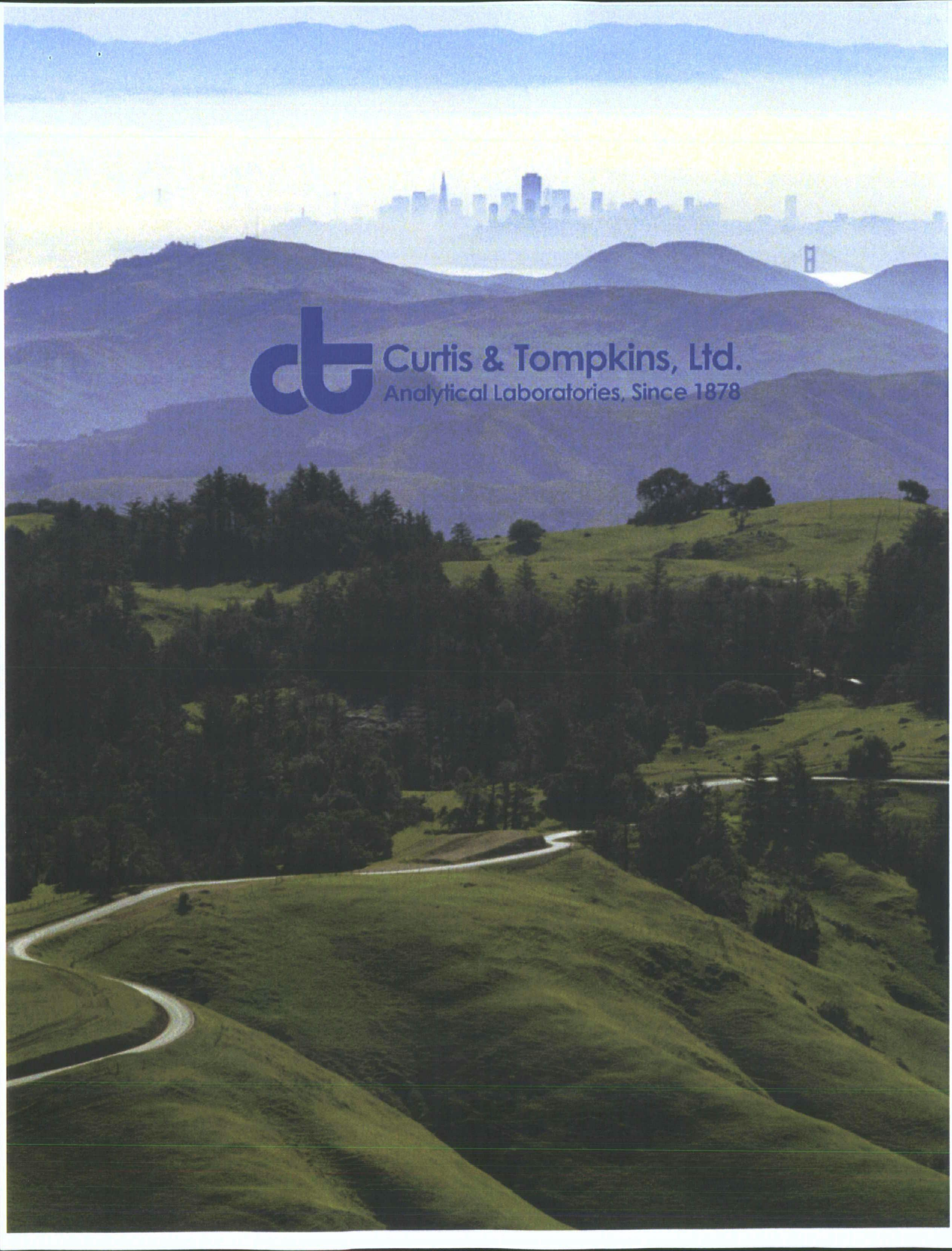
SAMPLE LOCATIONS UNKNOWN		
LOCID	CONCENTRATION	UNIT
PC7611	0.44J	mg/kg
PC7612	2.1J	mg/kg
PC7613	0.24J	mg/kg
PC7614	2.4J	mg/kg
PC7615	0.33=	mg/kg
PC8611	2.41=	mg/kg
PC8612	5.51=	mg/kg
PC8614	1.5=	mg/kg

FIGURE 3
PCB SITE BUILDING 688 UL#01 SAMPLING LOCATIONS AND REMAINING PCB CONCENTRATIONS
LENNAR MARE ISLAND, VALLEJO, CALIFORNIA

CH2MHILL

RDD V:\MARE_ISLAND_264204\MXDS\PCB\B688\FIG3_B688PREV_SAMPLE_BLOC11X17_B.MXD ECLARK1 11/3/2011 1:55:27 PM

Attachment 1
Analytical Laboratory Reports


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Attachment 2
Photographic Log for PCB Site Building 688 UL#01

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 221971
ANALYTICAL REPORT

CH2M Hill Constructors Inc.	Project : 277085.31.X1
690 Walnut Ave	Location : B688UL01 Investigation Sampling
Vallejo, CA 94592	Level : III

Sample ID	Lab ID
B688UL01GB0380-A0	221971-001
B688UL01GB0381-A0	221971-002
B688UL01GB0382-S0	221971-003
B688UL01GB0383-A0	221971-004
B688UL01GB0384-A0	221971-005
B688UL01GB0385-A0	221971-006
B688UL01GB0386-A0	221971-007
B688UL01GB0386-A0FD	221971-008
B688UL01MH0387-SD8	221971-009
B688UL01MH0388-SD8	221971-010

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Desiree N. Tetrault Date: 08/27/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**221971**
Client:	**CH2M Hill Constructors Inc.**
Project:	**277085.31.X1**
Location:	**B688UL01 Investigation Sampling**
Request Date:	**08/19/10**
Samples Received:	**08/19/10**

This data package contains sample and QC results for ten soil samples, requested for the above referenced project on 08/19/10. See attached cooler receipt form for any sample receipt problems or discrepancies.

PCBs (EPA 8082):

All samples underwent sulfuric acid cleanup using EPA Method 3665A.

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B.

No analytical problems were encountered.

Moisture (ASTM D2216/CLP):

No analytical problems were encountered.

Chain of Custody

Chain of Custody Record

COC Number: CTL-786

CH2MHILL 8/19/2010 3:02:33 PM

Project Name Mare Island **Location** Mare Island
Task Order **Project** B688UL01 Investigation Sampling
Project Number 277085.31.X1
Project Manager Paul Scherbak
Sample Manager Roger Lucich (925) 250-4441
Turnaround Time 5 Days
PO Number 277085.31.X1

	Sample ID	Sample Date/Time	Type	Matrix	# Containers	Preserv	SW8082
1	B688UL01GB0380-A0	19-Aug-10 11:00	N	Soil			
				Field Filtered ☐	1	4°C	☑
				Total Containers:	1		
2	B688UL01GB0381-A0	19-Aug-10 11:04	N	Soil			
				Field Filtered ☐	1	4°C	☑
				Total Containers:	1		
3	B688UL01GB0382-S0	19-Aug-10 11:25	N	Soil			
				Field Filtered ☐	1	4°C	☑
				Total Containers:	1		
4	B688UL01GB0383-A0	19-Aug-10 11:16	N	Soil			
				Field Filtered ☐	1	4°C	☑
				Total Containers:	1		

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by		8-19-10/1530
Received by		8/19/10
Relinquished by		
Received by		

Shipping Details
Method of Shipment:
On Ice: yes / no
Airbill No:
Lab Name: Curtis & Tompkins, Ltd.
Lab Phone: (510) 486-0925

ATTN:
Sample Custody
and
Lisa Brooker

Special Instructions:
please email copies of login summary and results to jpaik@ch2m.com and jlindqu1@ch2m.com
Report Copy to
Mark Cichy
(530) 229-3274

L21971

Chain of Custody Record

COC Number: CTL-786

CH2MHILL 8/19/2010 3:02:33 PM

Project Name Mare Island **Location** Mare Island
Task Order **Project** B688UL01 Investigation Sampling
Project Number 277085.31.X1
Project Manager Paul Scherbak
Sample Manager Roger Lucich (925) 250-4441
Turnaround Time 5 Days
PO Number 277085.31.X1

Sample ID	Sample Date/Time	Type	Matrix	# Containers	Preserv	SW8082
5 B688UL01GB0384-A0	19-Aug-10 11:20	N	Soil			
			Field Filtered ☐	1	4°C	☑
			Total Containers:	1		
B688UL01GB0385-A0	19-Aug-10 11:13	N	Soil			
			Field Filtered ☐	1	4°C	☑
			Total Containers:	1		
6 B688UL01GB0385-A0MS	19-Aug-10 11:13	MS	Soil			
			Field Filtered ☐	1	4°C	☑
			Total Containers:	1		
B688UL01GB0385-A0SD	19-Aug-10 11:13	SD	Soil			
			Field Filtered ☐	1	4°C	☑
			Total Containers:	1		

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by	Roger D Lucich	8-19-10/1530
Received by		8/19/10
Relinquished by		
Received by		

Shipping Details
Method of Shipment:
On Ice: yes / no
Airbill No:
Lab Name: Curtis & Tompkins, Ltd.
Lab Phone: (510) 486-0925

ATTN:
Sample Custody
and
Lisa Brooker

Special Instructions:
please email copies of login summary and results to jpaik@ch2m.com and jlindqu1@ch2m.com
Report Copy to
Mark Cichy
(530) 229-3274

221971

Chain of Custody Record

COC Number: CTL-786

CH2MHILL 8/19/2010 3:02:33 PM Page 3 of 3

Project Name Mare Island **Location** Mare Island
Task Order **Project** B688UL01 Investigation Sampling
Project Number 277085.31.X1
Project Manager Paul Scherbak
Sample Manager Roger Lucich (925) 250-4441
Turnaround Time 5 Days
PO Number 277085.31.X1

	Sample ID	Sample Date/Time	Type	Matrix	# Containers	Preserv	SW8082
7	B688UL01GB0386-A0	19-Aug-10 11:08	N	Soil			
				Field Filtered ☐	1	4°C	☑
				Total Containers:	1		
8	B688UL01GB0386-A0FD	19-Aug-10 11:08	N	Soil			
				Field Filtered ☐	1	4°C	☑
				Total Containers:	1		
9	B688UL01MH0387-SD8	19-Aug-10 10:10	N	Soil			
				Field Filtered ☐	1	4°C	☑
				Total Containers:	1		
10	B688UL01MH0388-SD8	19-Aug-10 10:20	N	Soil			
				Field Filtered ☐	1	4°C	☑
				Total Containers:	1		

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Approved by		
Sampled by		
Relinquished by	Roger D Lucich	8-19-10/1530
Received by		8/19/10
Relinquished by		
Received by		

Shipping Details
Method of Shipment:
On Ice: yes / no
Airbill No:
Lab Name: Curtis & Tompkins, Ltd.
Lab Phone: (510) 486-0925

ATTN:
Sample Custody
and
Lisa Brooker

Special Instructions:
please email copies of login summary and results to jpaik@ch2m.com and jlindqu1@ch2m.com
Report Copy to
Mark Cichy
(530) 229-3274

5 of 21

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 221971 Date Received 8/19/10 Number of coolers 1
Client acl Project MARE ISLAND

Date Opened 8/19/10 By (print) M. VILLANUEVA (sign)
Date Logged in ↓ By (print) ↓ (sign)

1. Did cooler come with a shipping slip (airbill, etc) YES NO
   Shipping info
2A. Were custody seals present? ☐ YES (circle) on cooler on samples ☐ NO
   How many 1 Name S. R. LUCICH Date 8/19/10
2B. Were custody seals intact upon arrival? YES NO N/A
3. Were custody papers dry and intact when received? YES NO
4. Were custody papers filled out properly (ink, signed, etc)? YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None
☐ Cloth material ☑ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 5.0

☐ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES NO
   If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? YES NO
10. Are samples in the appropriate containers for indicated tests? YES NO
11. Are sample labels present, in good condition and complete? YES NO
12. Do the sample labels agree with custody papers? YES NO
13. Was sufficient amount of sample sent for tests requested? YES NO
14. Are the samples appropriately preserved? YES NO N/A
15. Are bubbles > 6mm absent in VOA samples? YES NO N/A
16. Was the client contacted concerning this sample delivery? YES NO
   If YES, Who was called? By Date:

COMMENTS
#3 ID# OF SAMPLE 8688ULD16S0382-A0

Laboratory Job Number 221971

ANALYTICAL REPORT

PCBs

Matrix: Soil

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	221971	Location:	B688UL01 Investigation Sampling
Client:	CH2M Hill Constructors Inc.	Prep:	EPA 3550B
Project#:	277085.31.X1	Analysis:	EPA 8082
Matrix:	Soil	Sampled:	08/19/10
Units:	ug/Kg	Received:	08/19/10
Basis:	dry	Prepared:	08/21/10
Batch#:	166176		

Field ID:	B688UL01GB0380-A0	Moisture:	1%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	221971-001	Analyzed:	08/25/10

Analyte	Result	RL	MDL
Aroclor-1016	ND	42	15
Aroclor-1221	ND	84	10
Aroclor-1232	ND	42	7.7
Aroclor-1242	ND	42	4.0
Aroclor-1248	ND	42	11
Aroclor-1254	ND	42	8.1
Aroclor-1260	1,100	42	4.9
Aroclor-1262	ND	42	
Aroclor-1268	ND	42	

Surrogate	%REC	Limits
TCMX	84	25-143
Decachlorobiphenyl	85	25-143

Field ID:	B688UL01GB0381-A0	Moisture:	0%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	221971-002	Analyzed:	08/25/10

Analyte	Result	RL	MDL
Aroclor-1016	ND	42	15
Aroclor-1221	ND	83	10
Aroclor-1232	ND	42	7.6
Aroclor-1242	ND	42	4.0
Aroclor-1248	ND	42	11
Aroclor-1254	ND	42	8.0
Aroclor-1260	500	42	4.8
Aroclor-1262	ND	42	
Aroclor-1268	ND	42	

Surrogate	%REC	Limits
TCMX	25	25-143
Decachlorobiphenyl	33	25-143

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	221971	Location:	B688UL01 Investigation Sampling
Client:	CH2M Hill Constructors Inc.	Prep:	EPA 3550B
Project#:	277085.31.X1	Analysis:	EPA 8082
Matrix:	Soil	Sampled:	08/19/10
Units:	ug/Kg	Received:	08/19/10
Basis:	dry	Prepared:	08/21/10
Batch#:	166176		

Field ID:	B688UL01GB0382-S0	Moisture:	2%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	221971-003	Analyzed:	08/25/10

Analyte	Result	RL	MDL
Aroclor-1016	ND	42	15
Aroclor-1221	ND	84	10
Aroclor-1232	ND	42	7.7
Aroclor-1242	ND	42	4.0
Aroclor-1248	ND	42	11
Aroclor-1254	ND	42	8.1
Aroclor-1260	640	42	4.9
Aroclor-1262	ND	42	
Aroclor-1268	ND	42	

Surrogate	%REC	Limits
TCMX	53	25-143
Decachlorobiphenyl	69	25-143

Field ID:	B688UL01GB0383-A0	Moisture:	1%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	221971-004	Analyzed:	08/25/10

Analyte	Result	RL	MDL
Aroclor-1016	ND	42	15
Aroclor-1221	ND	84	10
Aroclor-1232	ND	42	7.6
Aroclor-1242	ND	42	4.0
Aroclor-1248	ND	42	11
Aroclor-1254	ND	42	8.0
Aroclor-1260	57	42	4.9
Aroclor-1262	ND	42	
Aroclor-1268	ND	42	

Surrogate	%REC	Limits
TCMX	77	25-143
Decachlorobiphenyl	51	25-143

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	221971	Location:	B688UL01 Investigation Sampling
Client:	CH2M Hill Constructors Inc.	Prep:	EPA 3550B
Project#:	277085.31.X1	Analysis:	EPA 8082
Matrix:	Soil	Sampled:	08/19/10
Units:	ug/Kg	Received:	08/19/10
Basis:	dry	Prepared:	08/21/10
Batch#:	166176		

Field ID:	B688UL01GB0384-A0	Moisture:	1%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	221971-005	Analyzed:	08/25/10

Analyte	Result	RL	MDL
Aroclor-1016	ND	42	15
Aroclor-1221	ND	84	10
Aroclor-1232	ND	42	7.6
Aroclor-1242	ND	42	4.0
Aroclor-1248	ND	42	11
Aroclor-1254	ND	42	8.0
Aroclor-1260	67	42	4.9
Aroclor-1262	ND	42	
Aroclor-1268	ND	42	

Surrogate	%REC	Limits
TCMX	60	25-143
Decachlorobiphenyl	52	25-143

Field ID:	B688UL01GB0385-A0	Moisture:	1%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	221971-006	Analyzed:	08/25/10

Analyte	Result	RL	MDL
Aroclor-1016	ND	43	15
Aroclor-1221	ND	85	10
Aroclor-1232	ND	43	7.7
Aroclor-1242	ND	43	4.1
Aroclor-1248	ND	43	11
Aroclor-1254	ND	43	8.2
Aroclor-1260	78	43	4.9
Aroclor-1262	ND	43	
Aroclor-1268	ND	43	

Surrogate	%REC	Limits
TCMX	57	25-143
Decachlorobiphenyl	46	25-143

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	221971	Location:	B688UL01 Investigation Sampling
Client:	CH2M Hill Constructors Inc.	Prep:	EPA 3550B
Project#:	277085.31.X1	Analysis:	EPA 8082
Matrix:	Soil	Sampled:	08/19/10
Units:	ug/Kg	Received:	08/19/10
Basis:	dry	Prepared:	08/21/10
Batch#:	166176		

Field ID:	B688UL01GB0386-A0	Moisture:	1%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	221971-007	Analyzed:	08/25/10

Analyte	Result	RL	MDL
Aroclor-1016	ND	42	15
Aroclor-1221	ND	84	10
Aroclor-1232	ND	42	7.7
Aroclor-1242	ND	42	4.0
Aroclor-1248	ND	42	11
Aroclor-1254	ND	42	8.1
Aroclor-1260	150	42	4.9
Aroclor-1262	ND	42	
Aroclor-1268	ND	42	

Surrogate	%REC	Limits
TCMX	68	25-143
Decachlorobiphenyl	45	25-143

Field ID:	B688UL01GB0386-A0FD	Moisture:	1%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	221971-008	Analyzed:	08/25/10

Analyte	Result	RL	MDL
Aroclor-1016	ND	42	15
Aroclor-1221	ND	84	10
Aroclor-1232	ND	42	7.7
Aroclor-1242	ND	42	4.0
Aroclor-1248	ND	42	11
Aroclor-1254	ND	42	8.1
Aroclor-1260	210	42	4.0
Aroclor-1262	ND	42	
Aroclor-1268	ND	42	

Surrogate	%REC	Limits
TCMX	81	25-143
Decachlorobiphenyl	49	25-143

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	221971	Location:	B688UL01 Investigation Sampling
Client:	CH2M Hill Constructors Inc.	Prep:	EPA 3550B
Project#:	277085.31.X1	Analysis:	EPA 8082
Matrix:	Soil	Sampled:	08/19/10
Units:	ug/Kg	Received:	08/19/10
Basis:	dry	Prepared:	08/21/10
Batch#:	166176		

Field ID:	B688UL01MH0387-SD8	Moisture:	49%
Type:	SAMPLE	Diln Fac:	100.0
Lab ID:	221971-009	Analyzed:	08/26/10

Analyte	Result	RL	MDL
Aroclor-1016	ND	1,700	93
Aroclor-1221	ND	3,300	400
Aroclor-1232	ND	1,700	300
Aroclor-1242	ND	1,700	160
Aroclor-1248	ND	1,700	420
Aroclor-1254	ND	1,700	320
Aroclor-1260	16,000	1,700	190
Aroclor-1262	ND	1,700	
Aroclor-1268	ND	1,700	

Surrogate	%REC	Limits
TCMX	DO	25-143
Decachlorobiphenyl	DO	25-143

Field ID:	B688UL01MH0388-SD8	Moisture:	50%
Type:	SAMPLE	Diln Fac:	100.0
Lab ID:	221971-010	Analyzed:	08/26/10

Analyte	Result	RL	MDL
Aroclor-1016	ND	1,700	94
Aroclor-1221	ND	3,300	400
Aroclor-1232	ND	1,700	300
Aroclor-1242	ND	1,700	160
Aroclor-1248	ND	1,700	430
Aroclor-1254	ND	1,700	320
Aroclor-1260	14,000	1,700	190
Aroclor-1262	ND	1,700	
Aroclor-1268	ND	1,700	

Surrogate	%REC	Limits
TCMX	DO	25-143
Decachlorobiphenyl	DO	25-143

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	221971	Location:	B688UL01 Investigation Sampling
Client:	CH2M Hill Constructors Inc.	Prep:	EPA 3550B
Project#:	277085.31.X1	Analysis:	EPA 8082
Matrix:	Soil	Sampled:	08/19/10
Units:	ug/Kg	Received:	08/19/10
Basis:	dry	Prepared:	08/21/10
Batch#:	166176		

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC557141	Analyzed:	08/25/10

Analyte	Result	RL	MDL
Aroclor-1016	ND	12	3.0
Aroclor-1221	ND	24	2.0
Aroclor-1232	ND	12	1.5
Aroclor-1242	ND	12	0.80
Aroclor-1248	ND	12	2.1
Aroclor-1254	ND	12	1.6
Aroclor-1260	ND	12	0.97
Aroclor-1262	ND	12	
Aroclor-1268	ND	12	

Surrogate	%REC	Limits
TCMX	98	25-143
Decachlorobiphenyl	55	25-143

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	221971	Location:	B688UL01 Investigation Sampling
Client:	CH2M Hill Constructors Inc.	Prep:	EPA 3550B
Project#:	277085.31.X1	Analysis:	EPA 8082
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC557142	Batch#:	166176
Matrix:	Soil	Prepared:	08/21/10
Units:	ug/Kg	Analyzed:	08/25/10

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	165.3	166.7	101	44-127
Aroclor-1260	165.3	178.2	108	31-136

Surrogate	%REC	Limits
TCMX	104	25-143
Decachlorobiphenyl	71	25-143

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	221971	Location:	B688UL01 Investigation Sampling
Client:	CH2M Hill Constructors Inc.	Prep:	EPA 3550B
Project#:	277085.31.X1	Analysis:	EPA 8082
Field ID:	B688UL01GB0385-A0	Batch#:	166176
MSS Lab ID:	221971-006	Sampled:	08/19/10
Matrix:	Soil	Received:	08/19/10
Units:	ug/Kg	Prepared:	08/21/10
Basis:	dry	Analyzed:	08/25/10
Diln Fac:	5.000		

Type: MS
Lab ID: QC557143

Moisture: 1%

Analyte	MSS Result	Spiked	Result	%REC	Limits
Aroclor-1016	<15.10	166.1	153.5	92	44-127
Aroclor-1260	78.18	166.1	215.6	83	31-136

Surrogate	%REC	Limits
TCMX	93	25-143
Decachlorobiphenyl	44	25-143

Type: MSD
Lab ID: QC557144

Moisture: 1%

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	168.6	204.4	121	44-127	27	50
Aroclor-1260	168.6	191.5	67	31-136	13	50

Surrogate	%REC	Limits
TCMX	73	25-143
Decachlorobiphenyl	48	25-143

RPD= Relative Percent Difference

Confirmation Report for 221971 PCBS Soil
Curtis & Tompkins Laboratories

Units: ug/Kg

Lab ID	Client ID	Analyte	Result	Confirmation	RPD	%D
221971-001	B688UL01GB0380-A0	Aroclor-1260	1072	1098	2	2
221971-002	B688UL01GB0381-A0	Aroclor-1260	495.0	351.6	34	-29
221971-003	B688UL01GB0382-S0	Aroclor-1260	643.4	457.8	34	-29
221971-004	B688UL01GB0383-A0	Aroclor-1260	56.87	40.99	32	-28
221971-005	B688UL01GB0384-A0	Aroclor-1260	66.70	52.34	24	-22
221971-006	B688UL01GB0385-A0	Aroclor-1260	78.18	57.41	31	-27
221971-007	B688UL01GB0386-A0	Aroclor-1260	147.4	129.8	13	-12
221971-008	B688UL01GB0386-A0FD	Aroclor-1260	208.7	205.3	2	-2
221971-009	B688UL01MH0387-SD8	Aroclor-1260	15720	13770	13	-12
221971-010	B688UL01MH0388-SD8	Aroclor-1260	13900	12500	11	-10

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 221971 PCBS Soil: EPA 8082

Inst : GC06
Calnum : 200340377001
Units : pg/uL

Name : 1660_236
Date : 24-AUG-2010 13:22
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	236_008	200340377008	PCB10_2	24-AUG-2010 13:22	S15290
L2	236_010	200340377010	PCB100_20	24-AUG-2010 14:17	S15286
L3	236_011	200340377011	PCB250_50	24-AUG-2010 14:45	S15284
L4	236_012	200340377012	PCB500_100	24-AUG-2010 15:13	S15287
L5	236_013	200340377013	PCB750_150	24-AUG-2010 15:40	S15288
L6	236_014	200340377014	PCB1000_200	24-AUG-2010 16:08	S15289
L7	236_016	200340377016	PCB25_5	24-AUG-2010 17:03	S15285

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1016 Peak # 1	A	134.10	129.60	115.16	111.72	105.12	104.38	126.60	AVRG		0.00847		118.10	10	.99	20	
Aroclor-1016 Peak # 2	A	295.70	298.33	274.45	277.16	276.11	281.57	290.12	AVRG		0.00351		284.78	3	.99	20	
Aroclor-1016 Peak # 3	A	192.90	211.87	179.14	179.33	167.24	169.65	191.84	AVRG		0.00542		184.57	8	.99	20	
Aroclor-1016 Peak # 4	A	120.00	126.10	107.86	102.83	96.885	100.06	114.40	AVRG		0.00911		109.73	10	.99	20	
Aroclor-1016 Peak # 5	A	167.70	165.19	155.61	150.95	142.87	145.44	163.08	AVRG		0.00642		155.83	6	.99	20	
Aroclor-1260 Peak # 1	A	446.20	446.63	416.70	397.59	358.23	377.52	443.64	AVRG		0.00243		412.36	9	.99	20	
Aroclor-1260 Peak # 2	A	362.40	390.16	380.20	381.54	327.69	351.18	374.84	AVRG		0.00273		366.86	6	.99	20	
Aroclor-1260 Peak # 3	A	195.60	258.72	248.26	230.99	210.01	230.49	241.48	AVRG		0.00433		230.79	9	.99	20	
Aroclor-1260 Peak # 4	A	527.40	559.79	530.94	533.23	484.86	526.76	530.76	AVRG		0.00190		527.68	4	.99	20	
Aroclor-1260 Peak # 5	A	257.90	274.48	263.32	274.43	252.64	279.32	237.48	AVRG		0.00381		262.80	6	.99	20	
TCMX	A	5625.0	5637.2	5724.3	5856.8	5697.7	5756.9	5540.6	AVRG		1.76E-4		5691.2	2	.99	20	
Decachlorobiphenyl	A	6658.0	6987.9	5943.7	5716.0	5026.2	5264.3	6694.0	AVRG		1.66E-4		6041.4	13	.99	20	
Aroclor-1016 Peak # 1	B	252.00	252.79	232.76	224.05	207.15	206.41	199.64	AVRG		0.00445		224.97	10	.99	20	
Aroclor-1016 Peak # 2	B	805.60	795.17	737.72	702.10	648.97	647.26	799.12	AVRG		0.00136		733.71	9	.99	20	
Aroclor-1016 Peak # 3	B	307.00	433.07	318.11	303.50	281.98	281.90	325.80	AVRG		0.00311		321.62	16	.99	20	
Aroclor-1016 Peak # 4	B	176.40	184.32	179.51	168.59	155.69	155.58	181.40	AVRG		0.00583		171.64	7	.99	20	
Aroclor-1016 Peak # 5	B	220.00	223.98	213.69	198.50	184.45	186.76	216.96	AVRG		0.00485		206.33	8	.99	20	
Aroclor-1260 Peak # 1	B	639.80	705.37	675.99	644.01	589.22	624.60	696.08	AVRG		0.00153		653.58	6	.99	20	
Aroclor-1260 Peak # 2	B	517.80	605.52	577.72	560.88	512.79	545.52	563.04	AVRG		0.00180		554.75	6	.99	20	
Aroclor-1260 Peak # 3	B	436.00	458.69	438.70	426.99	389.09	415.12	440.44	AVRG		0.00233		429.29	5	.99	20	
Aroclor-1260 Peak # 4	B	1088.3	1160.8	1114.7	1114.4	1014.8	1078.3	1083.7	AVRG		9.14E-4		1093.6	4	.99	20	
Aroclor-1260 Peak # 5	B	481.50	518.22	507.36	506.20	473.47	515.47	410.28	AVRG		0.00205		487.50	8	.99	20	
TCMX	B	7958.0	7899.8	7634.0	7597.6	7309.1	7309.4	7893.2	AVRG		1.31E-4		7657.3	4	.99	20	
Decachlorobiphenyl	B	8978.0	9531.9	8243.5	7987.1	7012.3	7338.6	8982.4	AVRG		1.21E-4		8296.3	11	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Aroclor-1016 Peak # 1	A	10.00	14	100.0	10	250.0	-2	500.0	-5	750.0	-11	1000	-12	25.00	7
Aroclor-1016 Peak # 2	A	10.00	4	100.0	5	250.0	-4	500.0	-3	750.0	-3	1000	-1	25.00	2
Aroclor-1016 Peak # 3	A	10.00	5	100.0	15	250.0	-3	500.0	-3	750.0	-9	1000	-8	25.00	4
Aroclor-1016 Peak # 4	A	10.00	9	100.0	15	250.0	-2	500.0	-6	750.0	-12	1000	-9	25.00	4
Aroclor-1016 Peak # 5	A	10.00	8	100.0	6	250.0	0	500.0	-3	750.0	-8	1000	-7	25.00	5
Aroclor-1260 Peak # 1	A	10.00	8	100.0	8	250.0	1	500.0	-4	750.0	-13	1000	-8	25.00	8
Aroclor-1260 Peak # 2	A	10.00	-1	100.0	6	250.0	4	500.0	4	750.0	-11	1000	-4	25.00	2
Aroclor-1260 Peak # 3	A	10.00	-15	100.0	12	250.0	8	500.0	0	750.0	-9	1000	0	25.00	5
Aroclor-1260 Peak # 4	A	10.00	0	100.0	6	250.0	1	500.0	1	750.0	-8	1000	0	25.00	1
Aroclor-1260 Peak # 5	A	10.00	-2	100.0	4	250.0	0	500.0	4	750.0	-4	1000	6	25.00	-10
TCMX	A	2.000	-1	20.00	-1	50.00	1	100.0	3	150.0	0	200.0	1	5.000	-3
Decachlorobiphenyl	A	2.000	10	20.00	16	50.00	-2	100.0	-5	150.0	-17	200.0	-13	5.000	11
Aroclor-1016 Peak # 1	B	10.00	12	100.0	12	250.0	3	500.0	0	750.0	-8	1000	-8	25.00	-11
Aroclor-1016 Peak # 2	B	10.00	10	100.0	8	250.0	1	500.0	-4	750.0	-12	1000	-12	25.00	9
Aroclor-1016 Peak # 3	B	10.00	-5	100.0	**35**	250.0	-1	500.0	-6	750.0	-12	1000	-12	25.00	1
Aroclor-1016 Peak # 4	B	10.00	3	100.0	7	250.0	5	500.0	-2	750.0	-9	1000	-9	25.00	6
Aroclor-1016 Peak # 5	B	10.00	7	100.0	9	250.0	4	500.0	-4	750.0	-11	1000	-9	25.00	5
Aroclor-1260 Peak # 1	B	10.00	-2	100.0	8	250.0	3	500.0	-1	750.0	-10	1000	-4	25.00	7
Aroclor-1260 Peak # 2	B	10.00	-7	100.0	9	250.0	4	500.0	1	750.0	-8	1000	-2	25.00	1
Aroclor-1260 Peak # 3	B	10.00	2	100.0	7	250.0	2	500.0	-1	750.0	-9	1000	-3	25.00	3
Aroclor-1260 Peak # 4	B	10.00	0	100.0	6	250.0	2	500.0	2	750.0	-7	1000	-1	25.00	-1
Aroclor-1260 Peak # 5	B	10.00	-1	100.0	6	250.0	4	500.0	4	750.0	-3	1000	6	25.00	-16
TCMX	B	2.000	4	20.00	3	50.00	0	100.0	-1	150.0	-5	200.0	-5	5.000	3
Decachlorobiphenyl	B	2.000	8	20.00	15	50.00	-1	100.0	-4	150.0	-15	200.0	-12	5.000	8

KMH 08/24/10 : see runs 216-022 - 028 for single point ical traces

KMH 08/24/10 : corrected automatically drawn baselines

KMH 08/24/10 : re-ran level 2 to improve rsd

Analyst: KMH Date: 08/24/10 Reviewer: EAH Date: 08/25/10

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

200340377001

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 221971 PCBS Soil
EPA 8082

Inst : GC06 Name : 1660_236
Calnum : 200340377001 Cal Date : 24-AUG-2010

ICV 200340377018 (236_018 24-AUG-2010) stds: S14374

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1016	A	250.0	266.5	pg/uL	7	15	
Aroclor-1260	A	250.0	245.7	pg/uL	-2	15	
Aroclor-1016	B	250.0	267.2	pg/uL	7	15	
Aroclor-1260	B	250.0	246.7	pg/uL	-1	15	

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 221971 PCBS Soil
EPA 8082

Inst : GC06 Run Name : PCB250_50 IDF : 1.0
Seqnum : 200341759002 File : 237_002 Time : 25-AUG-2010 08:31
Cal : 200340377001 Caldate : 24-AUG-2010
Standards: S15284

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			250.0	242.3	pg/uL	-3	15	
Aroclor-1260	A			250.0	224.9	pg/uL	-10	15	
TCMX	A	5691.2	5710.6	50.00	50.17	pg/uL	0	15	
Decachlorobiphenyl	A	6041.4	4844.7	50.00	40.10	pg/uL	**-20**	15	c-
Aroclor-1016	B			250.0	256.1	pg/uL	2	15	
Aroclor-1260	B			250.0	231.0	pg/uL	-8	15	
TCMX	B	7657.3	8007.7	50.00	52.29	pg/uL	5	15	
Decachlorobiphenyl	B	8296.3	6851.0	50.00	41.29	pg/uL	**-17**	15	c-

LTN 08/25/10 : Corrected automatically drawn baseline.

Analyst: LTN Date: 08/25/10 Reviewer: EAH Date: 08/26/10

-=low bias c=CCV

200341759002

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 221971 PCBS Soil
EPA 8082

Inst : GC06 Run Name : PCB500_100 IDF : 1.0
Seqnum : 200341759017 File : 237_017 Time : 25-AUG-2010 15:52
Cal : 200340377001 Caldate : 24-AUG-2010
Standards: S15287

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	504.0	pg/uL	1	15	
Aroclor-1260	A			500.0	505.6	pg/uL	1	15	
TCMX	A	5691.2	6169.2	100.0	108.4	pg/uL	8	15	
Decachlorobiphenyl	A	6041.4	4601.0	100.0	76.16	pg/uL	**-24**	15	c-
Aroclor-1016	B			500.0	480.6	pg/uL	-4	15	
Aroclor-1260	B			500.0	459.3	pg/uL	-8	15	
TCMX	B	7657.3	8090.8	100.0	105.7	pg/uL	6	15	
Decachlorobiphenyl	B	8296.3	6120.5	100.0	73.77	pg/uL	**-26**	15	c-

LTN 08/26/10 : Corrected automatically drawn baseline.

Analyst: LTN Date: 08/26/10 Reviewer: EAH Date: 08/26/10

-=low bias c=CCV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 221971 PCBS Soil
EPA 8082

Inst : GC06 Run Name : PCB250_50 IDF : 1.0
Seqnum : 200341759030 File : 237_030 Time : 25-AUG-2010 21:50
Cal : 200340377001 Caldate : 24-AUG-2010
Standards: S15284

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			250.0	267.6	pg/uL	7	15	
Aroclor-1260	A			250.0	264.4	pg/uL	6	15	
TCMX	A	5691.2	6290.5	50.00	55.27	pg/uL	11	15	
Decachlorobiphenyl	A	6041.4	5281.3	50.00	43.71	pg/uL	-13	15	
Aroclor-1016	B			250.0	270.4	pg/uL	8	15	
Aroclor-1260	B			250.0	252.2	pg/uL	1	15	
TCMX	B	7657.3	8338.2	50.00	54.45	pg/uL	9	15	
Decachlorobiphenyl	B	8296.3	7092.7	50.00	42.75	pg/uL	-15	15	

LTN 08/26/10 : Corrected automatically drawn baseline.

Analyst: LTN Date: 08/26/10 Reviewer: EAH Date: 08/26/10

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 221971 PCBS Soil
EPA 8082

Inst : GC06 Run Name : PCB500_100 IDF : 1.0
Seqnum : 200343108012 File : 238_012 Time : 26-AUG-2010 17:02
Cal : 200340377001 Caldate : 24-AUG-2010
Standards: S15287

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	395.5	pg/uL	**-21**	15	c- ***
Aroclor-1260	A			500.0	446.1	pg/uL	-11	15	
TCMX	A	5691.2	4785.9	100.0	84.09	pg/uL	**-16**	15	c-
Decachlorobiphenyl	A	6041.4	5212.7	100.0	86.28	pg/uL	-14	15	
Aroclor-1016	B			500.0	425.4	pg/uL	-15	15	
Aroclor-1260	B			500.0	446.6	pg/uL	-11	15	
TCMX	B	7657.3	6565.2	100.0	85.74	pg/uL	-14	15	
Decachlorobiphenyl	B	8296.3	7512.3	100.0	90.55	pg/uL	-9	15	

LTN 08/27/10 : Corrected automatically drawn baseline.

Analyst: LTN Date: 08/27/10 Reviewer: CP Date: 08/27/10

-=low bias c=CCV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 221971 PCBS Soil
EPA 8082

Inst : GC06 Run Name : PCB250_50 IDF : 1.0
Seqnum : 200343108015 File : 238_015 Time : 26-AUG-2010 18:32
Cal : 200340377001 Caldate : 24-AUG-2010
Standards: S15284

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			250.0	206.7	pg/uL	**-17**	15	c- ***
Aroclor-1260	A			250.0	221.9	pg/uL	-11	15	
TCMX	A	5691.2	4724.8	50.00	41.51	pg/uL	**-17**	15	c-
Decachlorobiphenyl	A	6041.4	5663.3	50.00	46.87	pg/uL	-6	15	
Aroclor-1016	B			250.0	218.5	pg/uL	-13	15	
Aroclor-1260	B			250.0	222.9	pg/uL	-11	15	
TCMX	B	7657.3	6510.1	50.00	42.51	pg/uL	-15	15	
Decachlorobiphenyl	B	8296.3	8076.4	50.00	48.68	pg/uL	-3	15	

LTN 08/27/10 : Corrected automatically drawn baseline.

Analyst: LTN Date: 08/27/10 Reviewer: CP Date: 08/27/10

-=low bias c=CCV

200343108015

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 200340377

Instrument : GC06
Method : EPA 8082
Begun : 08/24/10 08:57
SOP Version : pcb_rv.7

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	236_001	X	HEX			08/24/10 08:57	1.0		
002	236_002	X	CCV			08/24/10 09:24	1.0	1	
003	236_003	X	CCV			08/24/10 10:44	1.0	2	
004	236_004	CCV	PCB250_50			08/24/10 11:12	1.0	3	
005	236_005	CCV	PCB250_50			08/24/10 11:46	1.0	3	
006	236_006	X	HEX			08/24/10 12:27	1.0		
007	236_007	IB	CAL			08/24/10 12:55	1.0		
008	236_008	ICAL	PCB10_2			08/24/10 13:22	1.0	4	
009	236_009	ICAL	PCB25_5			08/24/10 13:50	1.0	5	
010	236_010	ICAL	PCB100_20			08/24/10 14:17	1.0	6	
011	236_011	ICAL	PCB250_50			08/24/10 14:45	1.0	3	
012	236_012	ICAL	PCB500_100			08/24/10 15:13	1.0	2	
013	236_013	ICAL	PCB750_150			08/24/10 15:40	1.0	7	
014	236_014	ICAL	PCB1000_200			08/24/10 16:08	1.0	8	
015	236_015	X	HEX			08/24/10 16:35	1.0		
016	236_016	ICAL	PCB25_5			08/24/10 17:03	1.0	5	
017	236_017	X	HEX			08/24/10 17:30	1.0		
018	236_018	ICV	ULTRA_1660			08/24/10 17:58	1.0	9	
019	236_019	CCV	AR2154			08/24/10 19:00	1.0	10	
020	236_020	CCV	AR1248			08/24/10 19:43	1.0	11	
021	236_021	X	CCV			08/24/10 20:10	1.0	10	
022	236_022	X	CCV			08/24/10 20:38	1.0	11	

KMH 08/24/10 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 18.

Standards used: 1=S14193 2=S15287 3=S15284 4=S15290 5=S15285 6=S15286 7=S15288 8=S15289 9=S14374 10=S15119 11=S15195

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 200341759

Instrument : GC06
Method : EPA 8082

Begun : 08/25/10 07:59
SOP Version : pcb_rv.7

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	237_001	X	HEX			08/25/10 07:59	1.0		
002	237_002	CCV	PCB250_50			08/25/10 08:31	1.0	1	
003	237_003	X	CCV			08/25/10 09:06	1.0	1	
004	237_004	X	HEX			08/25/10 09:41	1.0		
005	237_005	X	HEX			08/25/10 10:08	1.0		
006	237_006	CCV	AR2154			08/25/10 10:36	1.0	2	
007	237_007	BLANK	QC557141	Soil	166176	08/25/10 11:16	1.0		
008	237_008	LCS	QC557142	Soil	166176	08/25/10 11:44	1.0		
009	237_009	SAMPLE	221971-001	Soil	166176	08/25/10 12:11	5.0		
010	237_010	SAMPLE	221971-002	Soil	166176	08/25/10 12:39	5.0		
011	237_011	SAMPLE	221971-003	Soil	166176	08/25/10 13:06	5.0		
012	237_012	SAMPLE	221971-004	Soil	166176	08/25/10 13:34	5.0		
013	237_013	SAMPLE	221971-005	Soil	166176	08/25/10 14:01	5.0		
014	237_014	MSS	221971-006	Soil	166176	08/25/10 14:29	5.0		
015	237_015	SAMPLE	221971-007	Soil	166176	08/25/10 14:57	5.0		
016	237_016	SAMPLE	221971-008	Soil	166176	08/25/10 15:24	5.0		
017	237_017	CCV	PCB500_100			08/25/10 15:52	1.0	3	
018	237_018	X	CCV			08/25/10 16:19	1.0	3	
019	237_019	CCV	AR2154			08/25/10 16:47	1.0	2	
020	237_020	MS	QC557143	Soil	166176	08/25/10 17:14	5.0		
021	237_021	MSD	QC557144	Soil	166176	08/25/10 17:42	5.0		
022	237_022	SAMPLE	221971-009	Soil	166176	08/25/10 18:10	5.0		6:PCB1260#5=1600
023	237_023	SAMPLE	221971-010	Soil	166176	08/25/10 18:37	5.0		6:PCB1260#5=1400
024	237_024	MSS	221978-031	Soil	166204	08/25/10 19:05	1.0		
025	237_025	SAMPLE	221978-034	Soil	166204	08/25/10 19:32	1.0		
026	237_026	SAMPLE	221978-035	Soil	166204	08/25/10 20:00	1.0		
027	237_027	SAMPLE	221978-036	Soil	166204	08/25/10 20:27	1.0		
028	237_028	SAMPLE	221978-039	Soil	166204	08/25/10 20:55	1.0		
029	237_029	SAMPLE	221978-040	Soil	166204	08/25/10 21:22	1.0		
030	237_030	CCV	PCB250_50			08/25/10 21:50	1.0	1	
031	237_031	X	CCV			08/25/10 22:17	1.0	1	
032	237_032	CCV	AR2154			08/25/10 22:45	1.0	2	
033	237_033	MS	QC557300	Soil	166204	08/25/10 23:12	1.0		
034	237_034	MSD	QC557301	Soil	166204	08/25/10 23:40	1.0		
035	237_035	BLANK	QC557135	Soil	166173	08/26/10 00:08	1.0		
036	237_036	LCS	QC557136	Soil	166173	08/26/10 00:35	1.0		
037	237_037	MSS	221978-023	Soil	166173	08/26/10 01:03	1.0		6:PCB1248#5=2100
038	237_038	MS	QC557137	Soil	166173	08/26/10 01:30	1.0		2:PCB1016#4=1300
039	237_039	MSD	QC557138	Soil	166173	08/26/10 01:58	1.0		2:PCB1016#4=1100
040	237_040	SAMPLE	221978-007	Soil	166173	08/26/10 02:25	1.0		
041	237_041	SAMPLE	221978-008	Soil	166173	08/26/10 02:53	1.0		
042	237_042	SAMPLE	221978-011	Soil	166173	08/26/10 03:20	1.0		
043	237_043	X	CCV			08/26/10 03:48	1.0	3	
044	237_044	CCV	PCB500_100			08/26/10 04:15	1.0	3	
045	237_045	CCV	AR2154			08/26/10 04:43	1.0	2	

LTN 08/26/10 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 45.

Standards used: 1=S15284 2=S15119 3=S15287

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 200343108

Instrument : GC06
Method : EPA 8082
Begun : 08/26/10 06:28
SOP Version : pcb_rv.7

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used
001	238_001	X	HEX			08/26/10 06:28	1.0	
002	238_002	CCV	PCB250_50			08/26/10 06:55	1.0	1
003	238_003	X	CCV			08/26/10 07:23	1.0	1
004	238_004	SAMPLE	221971-009	Soil	166176	08/26/10 10:10	50.0	
005	238_005	SAMPLE	221971-010	Soil	166176	08/26/10 10:37	50.0	
006	238_006	X	CCV			08/26/10 11:08	1.0	2
007	238_007	X	HEX			08/26/10 12:29	1.0	
008	238_008	X	HEX			08/26/10 12:57	1.0	
009	238_009	X	HEX			08/26/10 13:24	1.0	
010	238_010	X	CCV			08/26/10 13:52	1.0	2
011	238_011	X	HEX			08/26/10 16:27	1.0	
012	238_012	CCV	PCB500_100			08/26/10 17:02	1.0	2
013	238_013	SAMPLE	221971-009	Soil	166176	08/26/10 17:37	100.0	
014	238_014	SAMPLE	221971-010	Soil	166176	08/26/10 18:05	100.0	
015	238_015	CCV	PCB250_50			08/26/10 18:32	1.0	1
016	238_016	X	CCV			08/26/10 19:00	1.0	1

LTN 08/26/10 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 10.

LTN 08/27/10 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 11 through 16.

Standards used: 1=S15284 2=S15287

SAMPLE PREPARATION SUMMARY

Batch # : 166176
Started By : CRD
Method : 3550B
Spike #1 ID : S15235

Prep Date : 21-AUG-2010 15:30

Spike #2 ID : S15344

Analysis : PCB
Finished By : CRD
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
221971-001		Soil	30.04	25	1	0.8322		1				PCB	See comment 1 below
221971-002		Soil	30.02	25	1	0.8328		1				PCB	
221971-003		Soil	30.34	25	1	0.824		1				PCB	
221971-004		Soil	30.07	25	1	0.8314		1				PCB	
221971-005		Soil	30.16	25	1	0.8289		1				PCB	
221971-006		Soil	29.67	25	1	0.8426		1				PCB	MSS
221971-007		Soil	30.01	25	1	0.8331		1				PCB	
221971-008		Soil	29.98	25	1	0.8339		1				PCB	
221971-009		Soil	29.68	25	1	0.8423		1				PCB	
221971-010		Soil	29.89	25	1	0.8364		1				PCB	
221993-001		Miscell.	30.15	25	1	0.8292		1				PCB	
221997-001		Soil	30	25	1	0.8333		1				PCB	
221997-002		Soil	30.29	25	1	0.8254		1				PCB	
221997-003		Soil	30.36	25	1	0.8235		1				PCB	
221997-004		Soil	30.35	25	1	0.8237		1				PCB	
221997-005		Soil	30.21	25	1	0.8275		1				PCB-EH	
221997-006		Soil	30.17	25	1	0.8286		1				PCB-EH	
QC557141	BLANK	Soil	29.97	25	1	0.8342		1					
QC557142	LCS	Soil	30.24	25	1	0.8267		1	1				
QC557143	MS	Soil	30.4	25	1	0.8224		1	1				
QC557144	MSD	Soil	29.95	25	1	0.8347		1	1				

Comment 1: Sample turned solid around edge of receiver after conc., strong rxn with acid

Analyst: LTN Date: 08/26/10 Reviewer: EAH Date: 08/26/10

PCB (8082) Soil Prep Log — Curtis & Tompkins, Ltd.

LIMS Batch No: 160176 — ☒ EPA 3550b Sonication — Page 47

LIMS Analysis: PCB — ☐ EPA 3545 PFE (ASE Method# ____) — BK 3049

Date Extracted: 8/21/10 — ☐ Other ____

	Sample ID	Container ID	Sample Wt (g)	Final Vol (mL)	Comments
	221993-001	A	30.15	25.0	DCM ONLY sample turned solid along edges of receiver, Strong Rxn w/Acid
	221971-001		30.04		
	02		30.02		
	03		30.34		
5	04		30.07		
	05		30.16		
	06		29.67		MSS
	07		30.01		
	08		29.98		
10	09		29.68		
	10		29.89		
	221997-001		30.00		
	2		30.29		
	3		30.36		
15	4		30.35		
	5		30.21		
	6		30.17		
	MB QC557141		29.97		
	LCS 2		30.24		
20	MS 3		30.40		
	MSD 4		29.95		

TKB 8/23/10

	Mfg & Lot # / LIMS # / Time	Initials / Date
Solvent-rinsed granular Na_2SO_4 weighed out for QC samples	EM5009 2015	LSD 8/21/10
dried with CH_2Cl_2-rinsed ☒ ~~granular~~ POWDER Na_2SO_4 ☐ diatomaceous earth	EM2270 C173	
1.0 mL of surrogate solution was added to all samples	S15235C	
1.0 mL of spike solution ____ was added to all spikes	S15344D	
PFE (ASE) Cellulose Filters used:	NA	
1:1 CH_2Cl_2 (lot# EM50182):Acetone(lot# EM50180) was added to all	✓	
Solvent added at (time)	1530	
☒ sonicated 3 times w/ ≥100mL ☐ PFE extracted ☐ soxhlet extractors on at:	✓	
Soxhlets off at:	NA	
Extracts filtered through baked, CH_2Cl_2-rinsed powdered Na_2SO_4	EM2270 C173	
Solvent exchanged with Hexane, Lot#	JTB 526 E34	
Concentrated to final volume at temperature (degrees C)	100	
EPA 3665A Clean-up: vortexed w/ H_2SO_4 Lot#	FS095669	
Centrifuged for 1 min; 10mL transferred to labelled vial	✓	
Relinquished to PCB group	✓	

8/21/10
Extraction Chemist / Date

Continued from page ____
Continued on page ____

8/23/10
Reviewed by / Date

Continued from Page

Sample ID	Weight (g)	Analysis	Batch #	Comments
221971-001 A	30.04	PCE	1060176	
-002 A	30.02			
-003 A	30.34			
-004	30.07			
-005	30.16			
-006	29.67			MSS
-007	30.01			
-008	29.98			
-009	29.68			
-010	29.89			
221978-007 A	30.15			
-008 A	29.98			
~~-009~~ LTN 6/10/10	30.18			
-012	29.97			
-013	29.87			
-014	30.11			
-015	30.23			
-016	29.68			
-017	30.45			
-018	30.11			
MB	29.97		1060176	EM500912015
LCS	30.24			
MS	30.4			221971-006
MSD	29.95			
~~MS~~ LTN 8/20/10				
~~MSD~~ LTN 8/20/10			LTN 8/20/10	

Continued on Page

Continued from Page

Sample I.D	Weight (g)	Analysis	Batch #	Comments
221978-023A	30.08	PCB		MSS
-024	30.0			
-025	30.08			
-026	30.03			
-027	30.13			
-028	30.24			
-029	30.10			
-030	30.27			
-031	30.01			MSS
-032	30.12			
-033	29.96			
-034	30.21			
-035	30.23			
-036	29.55			
-037	30.33			
-038	29.83			
-039	30.12			
-040	30.14			
MB	30.05			EMS0092015
LCS	30.08			
MS	30.24			221978-023
MSD	29.97			
MS	30.09			221978-031
MSD	30.21			
221993-001A	30.15	PCB	~~8/20/10~~ 1666176	
221997-001	30.00			
002	30.29			
003	30.36			
004	30.35			
005	30.21			
006	30.17			
			CRD 8/20/10	

Continued on Page

Read and Understood By

Signed Date Signed Date

REPORTING SUMMARY FOR 221971 PCBS Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
221971-001	Aroclor-1016	GC06	A	08/25/10 12:11
221971-001	Aroclor-1221	GC06	A	08/25/10 12:11
221971-001	Aroclor-1232	GC06	A	08/25/10 12:11
221971-001	Aroclor-1242	GC06	A	08/25/10 12:11
221971-001	Aroclor-1248	GC06	A	08/25/10 12:11
221971-001	Aroclor-1254	GC06	A	08/25/10 12:11
221971-001	Aroclor-1260	GC06	A	08/25/10 12:11
221971-001	Aroclor-1262	GC06	A	08/25/10 12:11
221971-001	Aroclor-1268	GC06	A	08/25/10 12:11
221971-001	TCMX	GC06	A	08/25/10 12:11
221971-001	Decachlorobiphenyl	GC06	A	08/25/10 12:11
221971-002	Aroclor-1016	GC06	A	08/25/10 12:39
221971-002	Aroclor-1221	GC06	A	08/25/10 12:39
221971-002	Aroclor-1232	GC06	A	08/25/10 12:39
221971-002	Aroclor-1242	GC06	A	08/25/10 12:39
221971-002	Aroclor-1248	GC06	A	08/25/10 12:39
221971-002	Aroclor-1254	GC06	A	08/25/10 12:39
221971-002	Aroclor-1260	GC06	A	08/25/10 12:39
221971-002	Aroclor-1262	GC06	A	08/25/10 12:39
221971-002	Aroclor-1268	GC06	A	08/25/10 12:39
221971-002	TCMX	GC06	B	08/25/10 12:39
221971-002	Decachlorobiphenyl	GC06	A	08/25/10 12:39
221971-003	Aroclor-1016	GC06	A	08/25/10 13:06
221971-003	Aroclor-1221	GC06	A	08/25/10 13:06
221971-003	Aroclor-1232	GC06	A	08/25/10 13:06
221971-003	Aroclor-1242	GC06	A	08/25/10 13:06
221971-003	Aroclor-1248	GC06	A	08/25/10 13:06
221971-003	Aroclor-1254	GC06	A	08/25/10 13:06
221971-003	Aroclor-1260	GC06	A	08/25/10 13:06
221971-003	Aroclor-1262	GC06	A	08/25/10 13:06
221971-003	Aroclor-1268	GC06	A	08/25/10 13:06
221971-003	TCMX	GC06	A	08/25/10 13:06
221971-003	Decachlorobiphenyl	GC06	A	08/25/10 13:06
221971-004	Aroclor-1016	GC06	A	08/25/10 13:34
221971-004	Aroclor-1221	GC06	A	08/25/10 13:34
221971-004	Aroclor-1232	GC06	A	08/25/10 13:34
221971-004	Aroclor-1242	GC06	A	08/25/10 13:34
221971-004	Aroclor-1248	GC06	A	08/25/10 13:34
221971-004	Aroclor-1254	GC06	A	08/25/10 13:34
221971-004	Aroclor-1260	GC06	A	08/25/10 13:34
221971-004	Aroclor-1262	GC06	A	08/25/10 13:34
221971-004	Aroclor-1268	GC06	A	08/25/10 13:34
221971-004	TCMX	GC06	A	08/25/10 13:34
221971-004	Decachlorobiphenyl	GC06	A	08/25/10 13:34
221971-005	Aroclor-1016	GC06	A	08/25/10 14:01
221971-005	Aroclor-1221	GC06	A	08/25/10 14:01
221971-005	Aroclor-1232	GC06	A	08/25/10 14:01
221971-005	Aroclor-1242	GC06	A	08/25/10 14:01
221971-005	Aroclor-1248	GC06	A	08/25/10 14:01
221971-005	Aroclor-1254	GC06	A	08/25/10 14:01

REPORTING SUMMARY FOR 221971 PCBS Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
221971-005	Aroclor-1260	GC06	A	08/25/10 14:01
221971-005	Aroclor-1262	GC06	A	08/25/10 14:01
221971-005	Aroclor-1268	GC06	A	08/25/10 14:01
221971-005	TCMX	GC06	A	08/25/10 14:01
221971-005	Decachlorobiphenyl	GC06	A	08/25/10 14:01
221971-006	Aroclor-1016	GC06	A	08/25/10 14:29
221971-006	Aroclor-1221	GC06	A	08/25/10 14:29
221971-006	Aroclor-1232	GC06	A	08/25/10 14:29
221971-006	Aroclor-1242	GC06	A	08/25/10 14:29
221971-006	Aroclor-1248	GC06	A	08/25/10 14:29
221971-006	Aroclor-1254	GC06	A	08/25/10 14:29
221971-006	Aroclor-1260	GC06	A	08/25/10 14:29
221971-006	Aroclor-1262	GC06	A	08/25/10 14:29
221971-006	Aroclor-1268	GC06	A	08/25/10 14:29
221971-006	TCMX	GC06	A	08/25/10 14:29
221971-006	Decachlorobiphenyl	GC06	A	08/25/10 14:29
221971-007	Aroclor-1016	GC06	A	08/25/10 14:57
221971-007	Aroclor-1221	GC06	A	08/25/10 14:57
221971-007	Aroclor-1232	GC06	A	08/25/10 14:57
221971-007	Aroclor-1242	GC06	A	08/25/10 14:57
221971-007	Aroclor-1248	GC06	A	08/25/10 14:57
221971-007	Aroclor-1254	GC06	A	08/25/10 14:57
221971-007	Aroclor-1260	GC06	A	08/25/10 14:57
221971-007	Aroclor-1262	GC06	A	08/25/10 14:57
221971-007	Aroclor-1268	GC06	A	08/25/10 14:57
221971-007	TCMX	GC06	A	08/25/10 14:57
221971-007	Decachlorobiphenyl	GC06	A	08/25/10 14:57
221971-008	Aroclor-1016	GC06	A	08/25/10 15:24
221971-008	Aroclor-1221	GC06	A	08/25/10 15:24
221971-008	Aroclor-1232	GC06	A	08/25/10 15:24
221971-008	Aroclor-1242	GC06	A	08/25/10 15:24
221971-008	Aroclor-1248	GC06	A	08/25/10 15:24
221971-008	Aroclor-1254	GC06	A	08/25/10 15:24
221971-008	Aroclor-1260	GC06	B	08/25/10 15:24
221971-008	Aroclor-1262	GC06	A	08/25/10 15:24
221971-008	Aroclor-1268	GC06	A	08/25/10 15:24
221971-008	TCMX	GC06	A	08/25/10 15:24
221971-008	Decachlorobiphenyl	GC06	A	08/25/10 15:24
221971-009	Aroclor-1016	GC06	B	08/26/10 17:37
221971-009	Aroclor-1221	GC06	A	08/26/10 17:37
221971-009	Aroclor-1232	GC06	A	08/26/10 17:37
221971-009	Aroclor-1242	GC06	A	08/26/10 17:37
221971-009	Aroclor-1248	GC06	A	08/26/10 17:37
221971-009	Aroclor-1254	GC06	A	08/26/10 17:37
221971-009	Aroclor-1260	GC06	A	08/26/10 17:37
221971-009	Aroclor-1262	GC06	A	08/26/10 17:37
221971-009	Aroclor-1268	GC06	A	08/26/10 17:37
221971-009	TCMX	GC06	B	08/26/10 17:37
221971-009	Decachlorobiphenyl	GC06	B	08/26/10 17:37

REPORTING SUMMARY FOR 221971 PCBS Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
221971-010	Aroclor-1016	GC06	B	08/26/10 18:05
221971-010	Aroclor-1221	GC06	A	08/26/10 18:05
221971-010	Aroclor-1232	GC06	A	08/26/10 18:05
221971-010	Aroclor-1242	GC06	A	08/26/10 18:05
221971-010	Aroclor-1248	GC06	A	08/26/10 18:05
221971-010	Aroclor-1254	GC06	A	08/26/10 18:05
221971-010	Aroclor-1260	GC06	A	08/26/10 18:05
221971-010	Aroclor-1262	GC06	A	08/26/10 18:05
221971-010	Aroclor-1268	GC06	A	08/26/10 18:05
221971-010	TCMX	GC06	B	08/26/10 18:05
221971-010	Decachlorobiphenyl	GC06	B	08/26/10 18:05
QC557141	Aroclor-1016	GC06	A	08/25/10 11:16
QC557141	Aroclor-1221	GC06	A	08/25/10 11:16
QC557141	Aroclor-1232	GC06	A	08/25/10 11:16
QC557141	Aroclor-1242	GC06	A	08/25/10 11:16
QC557141	Aroclor-1248	GC06	A	08/25/10 11:16
QC557141	Aroclor-1254	GC06	A	08/25/10 11:16
QC557141	Aroclor-1260	GC06	A	08/25/10 11:16
QC557141	Aroclor-1262	GC06	A	08/25/10 11:16
QC557141	Aroclor-1268	GC06	A	08/25/10 11:16
QC557141	TCMX	GC06	A	08/25/10 11:16
QC557141	Decachlorobiphenyl	GC06	A	08/25/10 11:16
QC557142	Aroclor-1016	GC06	A	08/25/10 11:44
QC557142	Aroclor-1260	GC06	A	08/25/10 11:44
QC557142	TCMX	GC06	A	08/25/10 11:44
QC557142	Decachlorobiphenyl	GC06	A	08/25/10 11:44
QC557143	Aroclor-1016	GC06	A	08/25/10 17:14
QC557143	Aroclor-1260	GC06	A	08/25/10 17:14
QC557143	TCMX	GC06	B	08/25/10 17:14
QC557143	Decachlorobiphenyl	GC06	A	08/25/10 17:14
QC557144	Aroclor-1016	GC06	A	08/25/10 17:42
QC557144	Aroclor-1260	GC06	A	08/25/10 17:42
QC557144	TCMX	GC06	B	08/25/10 17:42
QC557144	Decachlorobiphenyl	GC06	A	08/25/10 17:42

Laboratory Job Number 221971

ANALYTICAL REPORT

Wet Chemistry

Matrix: Soil

Percent Moisture Summary Report

Batch: 166251
Date: 08/24/10
Method: CLP SOW 390
Analyst: BPB

Sample	Tare (g)	Wet (g)	Dry (g)	Percent Solids	Percent Moisture
221971-001	11.3906	18.6414	18.5988	99	1
221971-002	10.9854	18.0174	17.9904	100	0
221971-003	11.3944	18.4979	18.3385	98	2
221971-004	11.4398	18.5692	18.5158	99	1
221971-005	11.4534	16.9289	16.8930	99	1
221971-006	11.3890	16.9916	16.9408	99	1
221971-007	11.5917	17.2043	17.1500	99	1
221971-008	11.1851	19.0978	19.0345	99	1
221971-009	11.4732	16.8743	14.2281	51	49
221971-010	11.0626	17.2055	14.1071	50	50
221991-005	11.3983	18.3915	17.6924	90	10
222030-001	11.1888	20.9887	20.7409	97	3
QC557617	11.3128	19.7735	19.5847	98	2
of 222030-001			RPD:	0.3%	12.5%

Continued from Page

8/24/10

B# 166851

Sample	SL	DISH#	DISH wt.	Sample wt.	Total wt.	Comments
BLK	QC	P31	11.3112	0	11.3110	
221971-001	A	B52	11.3906	18.6414	18.5988	
-002		BBB	10.9859	18.0174	17.9904	
-003		200	11.3944	18.4979	18.3385	
-004		CH8	11.4398	18.5692	18.5158	
-005		N03	11.4534	16.9389	16.8930	
-006		VCM	11.3890	16.9916	16.9408	
-007		CT2	11.5917	17.2043	17.1500	
-008		B106	11.1851	19.0978	19.0345	
-009		E08	11.4732	16.8743	16.8228	
-010		B1M	11.0626	17.2055	17.1507	
221991-005	Comp	CT4	11.3988	18.3915	18.2694	
222030-001	A	B104	11.1888	30.9887	30.7409	
↓ Dup 001	↓	C32	11.3128	19.7735	19.5891	

Time In: 4:00 PM
Time Out: 2:15 PM
Oven Temp: 103°C

Continued on Page

Read and Understood By

Signature 8/24/10 Date Signature 8/25/10 Date

DATE	ANALYST									Set
8-14-10	VV	0.2000	0.4999	1.0000	1.9999	5.0000	9.9999	19.9999	50.0001	100.0000	10827
8/15-10	VV	0.2000	0.5000	1.0000	2.0000	5.0000	10.0001	20.0001	50.0001	100.0005	10827
8/16/10	BRB	0.2000	0.4999	0.9999	1.9999	4.9998	19.9997	49.9996	99.9997		10827
8/17/10	BRB	0.2000	0.4999	0.9999	1.9999	4.9999	19.9998	49.9997	99.9996		10827
8/18/10	BRB	0.1999	0.4998	0.9998	1.9998	4.9997	19.9998	49.9996	99.9995		10827
8/19/10	BRB	0.2000	0.5000	1.0001	2.0001	5.0001	20.0001	50.0002	99.9998		10827
8-20-10	VV	0.2000	0.5000	1.0000	2.0000	4.9998	20.0000	9.9999	50.0000	100.00	10827
8/23/10	BRB	0.2000	0.4999	0.9999	1.9998	4.9998	20.0001	50.0001	99.9997		10827
8/24/10	BRB	0.2000	0.4999	0.9999	1.9999	4.9997	19.9997	49.9996	99.9993		10827
8/25/10	BRB	0.2000	0.5001	1.0001	2.0001	4.9999	19.9996	49.9996	99.9995		10827

Continued on Page

Read and Understood B

Attachment 2
Photographic Log for PCB Site Building 688 UL#01

Attachment 2
Photograph Log for PCB Site Building 688 UL#01

Photograph 1: PCB Site Building 688 UL#01 along west side of Building 688.

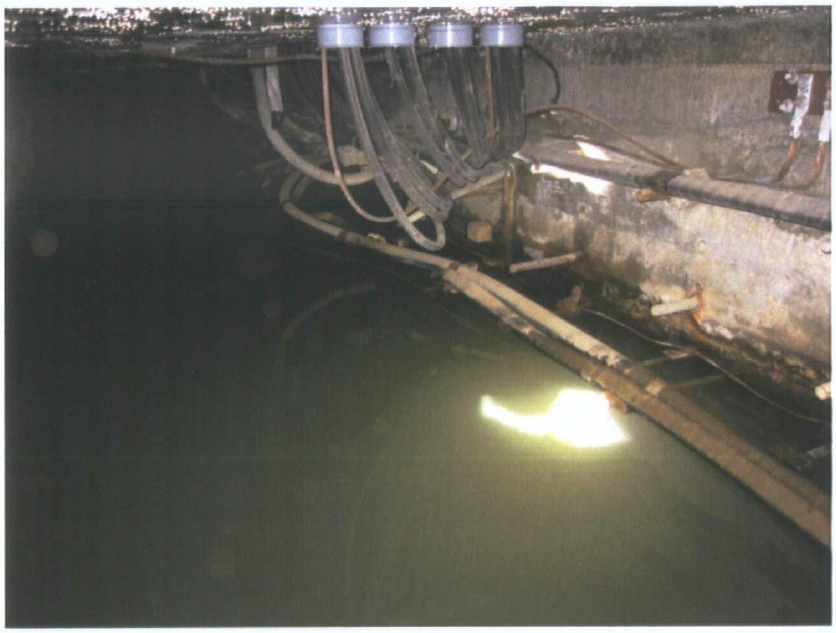
Photograph 2: Electrical manhole cover at south end of Building 688 UL#01 transformer pad.

Photograph 3: Electrical manhole at northwest end of transformer pad, view looking northeast.

Photograph 4: Electrical manhole near northwest corner of transformer pad, view looking east.

Photograph 5: Electrical manhole at southwest end of transformer pad, view looking southeast.

Photograph 6: Electrical manhole at southwest end of transformer pad, view looking northeast.



Photograph 7: Electrical manhole at southwest end of transformer pad, view looking northwest towards electrical manhole at northwest end of transformer pad.

Attachment 3
ProUCL Outputs

Table 1
ProUCL Output for PCB data from Soil at Building 688 UL01: Soil
PCB Sites, Lennar Mare Island, Vallejo, California

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	10000

soil

General Statistics			
Number of Valid Data	27	Number of Detected Data	17
Number of Distinct Detected Data	16	Number of Non-Detect Data	10
		Percent Non-Detects	37.04%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.014	Minimum Detected	-4.269
Maximum Detected	5.51	Maximum Detected	1.707
Mean of Detected	1.14	Mean of Detected	-0.689
SD of Detected	1.391	SD of Detected	1.55
Minimum Non-Detect	0.018	Minimum Non-Detect	-4.017
Maximum Non-Detect	0.22	Maximum Non-Detect	-1.514
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	15
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	12
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	55.56%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.759	Shapiro Wilk Test Statistic	0.962
5% Shapiro Wilk Critical Value	0.892	5% Shapiro Wilk Critical Value	0.892
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.725	Mean	-2.068
SD	1.223	SD	2.246
95% DL/2 (t) UCL	1.126	95% H-Stat (DL/2) UCL	11.17
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.853
		SD in Log Scale	2.018
		Mean in Original Scale	0.728
		SD in Original Scale	1.221
		95% t UCL	1.128
		95% Percentile Bootstrap UCL	1.131
		95% BCA Bootstrap UCL	1.269
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.643	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	1.773		
nu star	21.85		
A-D Test Statistic	0.167	Nonparametric Statistics	
5% A-D Critical Value	0.778	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.778	Mean	0.724
5% K-S Critical Value	0.218	SD	1.2
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.238
		95% KM (t) UCL	1.13
Assuming Gamma Distribution		95% KM (z) UCL	1.116
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.113
Minimum	1.00E-12	95% KM (bootstrap t) UCL	1.379
Maximum	5.51	95% KM (BCA) UCL	1.18
Mean	0.878	95% KM (Percentile Bootstrap) UCL	1.157
Median	0.67	95% KM (Chebyshev) UCL	1.762
SD	1.167	97.5% KM (Chebyshev) UCL	2.211
k star	0.361	99% KM (Chebyshev) UCL	3.093
Theta star	2.435		
Nu star	19.47	Potential UCLs to Use	
AppChi2	10.46	95% KM (BCA) UCL	1.18
95% Gamma Approximate UCL	1.634		
95% Adjusted Gamma UCL	1.703		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Table 2
ProUCL Output for PCB data from Building Materials (concrete and asphalt) at Building 688 UL01: Building Materials
PCB Sites, Lennar Mare Island, Vallejo, California

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	10000

building_materials

General Statistics			
Number of Valid Data	22	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	11
		Percent Non-Detects	50.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.082	Minimum Detected	-2.501
Maximum Detected	8.4	Maximum Detected	2.128
Mean of Detected	1.78	Mean of Detected	-0.395
SD of Detected	2.474	SD of Detected	1.621
Minimum Non-Detect	1	Minimum Non-Detect	0
Maximum Non-Detect	1	Maximum Non-Detect	0

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.719	Shapiro Wilk Test Statistic	0.921
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.14	Mean	-0.544
SD	1.829	SD	1.129
95% DL/2 (t) UCL	1.811	95% H-Stat (DL/2) UCL	2.169
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.14
		SD in Log Scale	1.539
		Mean in Original Scale	1.006
		SD in Original Scale	1.887
		95% t UCL	1.699
		95% Percentile Bootstrap UCL	1.711
		95% BCA Bootstrap UCL	2.035

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.52	Data appear Gamma Distributed at 5% Significance Level
Theta Star	3.426	
nu star	11.43	

A-D Test Statistic	0.345	Nonparametric Statistics	
5% A-D Critical Value	0.771	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.771	Mean	0.989
5% K-S Critical Value	0.267	SD	1.85
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.417
		95% KM (t) UCL	1.705
Assuming Gamma Distribution		95% KM (z) UCL	1.674
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.691
Minimum	0.082	95% KM (bootstrap t) UCL	2.579
Maximum	8.4	95% KM (BCA) UCL	1.786
Mean	1.757	95% KM (Percentile Bootstrap) UCL	1.721
Median	1.703	95% KM (Chebyshev) UCL	2.804
SD	1.709	97.5% KM (Chebyshev) UCL	3.59
k star	1.037	99% KM (Chebyshev) UCL	5.133
Theta star	1.694		
Nu star	45.62	Potential UCLs to Use	
AppChi2	31.12	95% KM (t) UCL	1.705
95% Gamma Approximate UCL	2.575		
95% Adjusted Gamma UCL	2.651		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.